ANNUAL NARRATIVE REPORT 1971

NECEDAH NATIONAL WILDLIFE REFUGE

NECEDAH, WISCONSIN

Necedah National Wildlife Refuge

Necedah, Wisconsin

PERSONNEL

Gerald H. Updike - - - - - - - - - - - - Refuge Manager

Grady E. Hocutt * - - - - to 6/12 - - Ass't. Refuge Manager

Bradley D. Ehlers ** - - from 6/27 - - Ass't. Refuge Manager

Theodore A. Johnson - - - - - - - - - - Forester

Vern E. Rudolph - - - - - - - - - - - - Clerk

Robert W. Arrowsmith *** - to 5/29 -- Mechanic

Harold R. Carter - - - - - - - - - - - - Maintenanceman

Paul E. Woggon - - - - - to 6/26 - - - Tractor Operator
- - - - - from 6/27 - - Maintenanceman

TEMPORARY

Larry Knickelbein - - - 5/17 - 11/13 - Laborer

Marvin Jones - - - - - 5/17 - 11/13 - Laborer

Clyde Bourgard - - - - 7/8 - 8/20 NYC Student

Greg Domke - - - - - - 7/8 - 8/27 NYC Student

* Transferred to Madison Wetlands Office, South Dakota

** Transferred from F.A.A., Minneapolis

*** Retired

C O N T E N T S

I. GENERAL

A. Weather Conditions

	Precipitation			Max.	Min.
	Month	Normal	Snowfall	Temp.	Temp.
January	2.02	1.02	28.50	36	- 28
February	2.63	.97	19.50	50	- 34
March	.78	1.92	8.00	61	- 12
April	1.68	2.80	.50	78	13
May	4.23	4.32		81	29
June	4.20	4.88		94	42
July	5.92	3.62		90	42
August	3.73	3.36		86	42
September	3.03	3.99		88	30
October	2.07	2.33		81	26
November	4.24	1.95	13.50	63	5
December	2.31	1.39	10.25	39	- 4
Annual Totals	36.84	32.55	80.25	Extremes 94	- 34

January began with 12 inches of snow on the ground. Below zero temperatures were recorded on 16 days and the so-called "January thaw" did not materialize. Snow depth increased to 22 inches by the end of the month and by mid-February 30 inches was recorded on the ground. Then warm weather came and a one-inch rainfall on February 19 settled the snow to 18 inches. The last snow storm occurred March 19 and all snow had melted by March 25. Cool nights prevented a rapid run-off of the melted snow.

There were many days of nice sunshine during April. In May east winds resulted in much cooler temperatures. June was characterized by humid weather and on eight different days tornado warnings were

given for this area. On June 20 a small twister caused damage to oak timber near the middle Canfield farm unit.

July weather was a direct contrast to June as cool temperatures were recorded throughout the month with nearly twice the normal precipitation received. Occasional showers and cool temperatures continued into August. September was a beautiful month with many days of warm sunshine and a light frost on the 24th. The first heavy frost occurred October 7. Warm weather hung on until November 7 when temperatures dropped sharply and all pools froze over. Over 12 inches of snow fell the last week of November. A few rains occurred the first part of December and at the end of the year seven inches of snow was on the ground.

B. Habitat Conditions

1. Water

Water supply is dependent upon precipitation and the watershed to the north and west. Total precipitation for 1971 was 36.84 inches, which is close to the 31 year average of 32.55 inches. Distribution of this precipitation throughout the year was fairly even with a 3.25 inch rainfall on July 18 and a dry period during the first half of October being the exceptions.

The spring thaw was gradual and adequate water was present throughout the year for management purposes.

2. Food and Cover

Food abundance, quality, and availability were all adequate. Corn and buckwheat fields in the Canfield farm units were flooded during October and November. The birds, mainly Canada geese and mallards utilized 90% of the flooded crops and adjacent corn, buckwheat, rye, and tame grass strips. Only those fields close to public roads were left unused.

Lowered pools, namely Rynearson 1 Pool, Goose Pool, and Sprague Pool, all received heavy fall goose use on smartweed and needlerush. Coots found beds of Elodea to their liking in the Sprague Pool. Wood ducks made good use of acorns and aquatics in ditches. No artificial feeding was carried out.

Upland food and cover conditions were good. Oaks produced a fair mast crop for deer, turkeys, squirrels, and grouse. A large crop of pincherries was noticed in the area just south of Pool 19. Blueberry production was excellent and sandhill cranes fed on these and the freshly burned grass strips.

Timber harvesting above the Sprague Pool (cut in 1962) has produced good deer food and cover. Use of this area is much

greater than in the surrounding older forest areas as evidenced by deer trails and heavy browsing on young jack pines. Deer also used corn fields heavily in the fall and winter months.

II. WILDLIFE

A. Migratory Birds

1. Swans

Swan use is limited to rest stops during their migrations. Over 270 were observed at one time during the first part of April (mostly in Rynearson 2 Pool). The peak fall count was six birds, but flocks were heard over subheadquarters after dark heading southeast on October 12, 13, and 17.

2. Geese

The first Canada geese (4) were sighted in this area on March 6. The peak spring population of 5,550 geese occurred the second week of April. The resident goose flock numbered 120 birds. By late August there were 430 geese on the refuge as birds from the surrounding area were attracted to browse in the drawn-down Goose Pool.

The resident flock produced an estimated 50 young. Most of the production occurred on islands in the larger pools. Goose production in the surrounding area is increasing.

First migrant geese arrived September 19 and an estimated 12,000 geese were using the refuge the last week of September. The flooded farm fields, rye fields, burn areas, and lowered pools attracted and held the majority of the geese. The peak fall population consisted of 18,000 Canada geese and 1,200 Snow-Blue geese during the third week of October; this is the highest peak since 1959. The following chart shows peak goose populations and total use-days for the past six years:

PEAK GOOSE NUMBERS

Year	Canada	Snow-Blue	Total Use-Days/Year
1966	10,950	910	427,405
1967	9,750	215	329,979
1968	12,530	100	475,600
1969	15,200	1,200	511,723
1970	9,000	1,000	504,370
1971	18,000	5,000*	792,371
Average	12,572	1,404	506,908

*Counted on October 27

A hardy flock of 300 Canada geese remained in the area until December 19. They fed on State corn fields to the south of the refuge and rested on Rynearson 1 Pool. These birds provided much hunting opportunity, but few were shot.

3. Ducks

Peak numbers shown by seasons, are given in the following five year comparison table:

PEAK DUCK COUNTS BY SEASON

Year	Spring	Summer	Fall
1967	7,190	4,770	19,505
1968	3,070	3,560	22,730
1969	12,190	4,880	14,500
1970	6,745	3,690	17,500
1971	6,010	4,268	23,543
Average	7,041	4,234	19,556

The table shows 1971 to be an average year with a slightly higher peak fall migration.

An estimated 1,470 ducks were produced in 1971. This figure was arrived at by multiplying: breeding pair count x hatching rate x average brood size to flight stage. The breeding pair count was obtained by aerial survey on May 12 and came out to 1,032 pairs. The average brood size of 21 broods observed was 5.7. The hatching rate was figured at 25%, which may be high for this area.

breeding pair count	x	average brood size	x	hatching rate	=	production
1,032		5.7		.25	=	1,470

Use-day percentage by species of the most numerous fall ducks is shown on the following page.

1971 FALL DUCK USE-DAY DATA

Species	Fall Use-Days	% of Total
Mallard	340,000	56
Baldpate	130,000	22
Black	34,000	6
Gadwall	26,000	4
Green-winged Teal	22,000	4
Blue-winged Teal	20,000	3
Pintail	18,000	2
Wood Duck	17,000	2
Miscellaneous	7,000	1
	614,000	96

Only two scaup were observed this fall compared to a peak of 500 in 1970. The ring-necked duck peak dropped from 3,600 in 1970 to 100 this fall. Deep water was present in Rynearson 2 Pool where most of the diver use was recorded. No reason has been found for the divers "skipping" this area.

4. Coots

First arrivals came during the week of March 25. An estimated five stayed all summer with no observed production. The fall peak was 9,000 coots with most use in the Rynearson 1 Pool rice bed and the Sprague Pool.

5. Other Water Birds

A great blue heron die-off occurred in the Sprague Pool rookery during June. An estimated 60 young herons died at different times as evidenced by various stages of decomposition. Bill measurements were taken in an attempt to correlate age of the birds with time of death. The measurements varied from 67 mm. to 157 mm. on 20 birds.

The history of the rookery is depicted in the table on the following page.

SPRAGUE POOL HERON ROOKERY DATA

Year	Number of Nests*	Number of Young**
1971	40	2
1970	28	15
1969	28	50
1968	26	52
1967	49	15-20
1966	29	40
1965	14	29
1964	7	21
1963	30	60
1962	30	90
1961	60	180
1960	250	450
1959	300	200
1958	300	50
1957	164	200

* This is either total nests or nests from which young were raised.

** Not known if this is young hatched or young to flight.

Trees containing the heron nests are dead as a result of the flooded pool and are continually falling down. A count in July revealed only 18 nests remaining; 17 were counted in December.

Similar heron die-offs have occurred in the past. In 1958 about 150 of 200 herons that hatched died, and in 1967 100 of 120 young died. It is quite possible that die-offs occurred in other years but were not detected. No cause for the die-offs has been found. The rookery will be monitored closely in future years for quick detection of a possible die-off.

Common egrets were not observed on the refuge this fall. One was observed on May 3.

Green heron observations were much higher than in recent years.

Black terns, pied-billed grebes, American bitterns, woodcock, snipe, and other shorebirds were commonly seen. Gulls were observed in the spring, but not in the fall.

6. Doves

Mourning doves were common from late March through September. Doves per stop recorded on the annual spring call-count survey were 1.9. Counts for the past two years were 0.7 doves per stop in 1970 and 0.9 doves per stop in 1969. The September peak was over 500 birds most of which were using refuge buckwheat fields.

B. Upland Game Birds

Wild Turkeys experienced deep and fluffy snow conditions during the 1970-71 winter and winter mortality was severe. Broods between 5 and 10 poults were observed this spring, but winter carry-over of the breeding flock was poor. The population is estimated at 50 - 100 turkeys going into the winter of 1971-72.

Ruffed grouse numbers remained high. Grouse were commonly seen on refuge roads throughout the year.

The sharp-tailed grouse population remains very low with six visual sightings reported. Reintroduction of this species is hoped for in the near future as prairie restoration work progresses.

C. Big Game Animals

Major deer food species include jack pine, white pine, aspen, oak, acorns and corn. Deer concentrate only during severe winters in central Wisconsin and even then there are no tight "yarding" situations. Reproduction was good as many does were observed with twins and two sets of triplets were sighted. In the early fall deer frequent alfalfa, mowed grass, and burned fields.

The three hunting seasons removed approximately 300 deer. State figures (gathered at compulsory registration stations) showed the kill in this area to be 3.3 bucks and 1.6 qucta deer per square mile.

Deer made heavy use of corn fields during December and into 1972. Young jack pine in timber harvest areas also received heavy winter use.

D. Fur Animals, Predators, Rodents, and other Mammals

Coyotes were frequently observed, especially in farm fields during the fall waterfowl migration. Beaver and muskrats are numerous and otters were occasionally observed this past summer. Other mammals commonly sighted include raccoon, skunk, red fox, and woodchuck. Badgers, mink, weasel, and oppossum are less frequently observed. A bobcat was observed on September 1 north of Structure 29.

Beaver continue to block culverts and build dams near bridges causing problems with township roads.

E. Hawks, Eagles, Owls, Crows, Ravens and Magpies

Red-tailed hawks, marsh hawks and sparrow hawks are the most common hawks occurring on the refuge. A noticeable migration of hawks occurred during the first week of October.

Golden and bald eagles are common on the refuge from March to

December. Many eagles winter below Castle Rock and Petenwell dams. The winter eagle count revealed 18 adult bald eagles, four immature bald eagles, and six undetermined eagles. This winter count included Petenwell flowage, Castle Rock flowage and the refuge.

Barred owl and great horned owl are the most common owls on the refuge. Snowy owls have been observed in past falls, but none were sighted this fall.

Crows use the refuge all year with the peak population being estimated at 300.

F. Other Birds

Many fox sparrows were sighted on April 2. Rose-breasted grosbeaks and yellow-throated warblers were abundant during mid-May. Slate-colored juncos were common in October. Snow buntings were first seen on October 27.

G. Fish

The major species sought by fishermen were northern pike and brown bullheads. The bullheads are numerous and probably stunted as their average length is under six inches. Carp were common in the Goose Pool and many could be sighted rolling at one time.

Many northern pike (15" - 25") were observed trying to enter the Sprague Pool through Dam 30 during the spring spawning run.

H. Reptiles

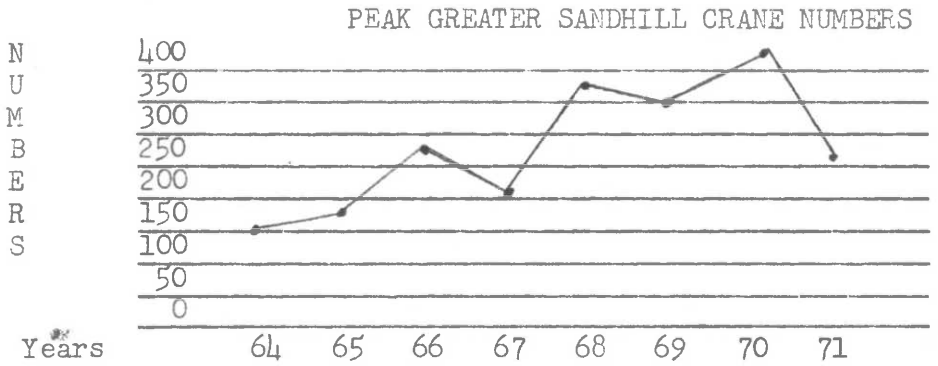
Snapping and painted turtles are common on the refuge. Blanding's turtles are seen occasionally.

I. Disease

Nothing to report. See Section II A 5 for heron die-off.

J. Rare and Endangered Species

The peak population of greater sandhill cranes was 240 this fall. The following table shows the fall population peak over the past few years.



The cranes continue to favor burn areas and drawn-down pools as feeding and loafing sites.

Ospreys were sighted occasionally in the Sprague Pool. Four were sighted in May and again in July. The Sprague Pool should be thoroughly checked for possible osprey nests in future years.

III. Refuge Development and Maintenance

A. Physical Development

1. Water Management

A 5' culvert was placed in Spencer-Robinson ditch near highway 80 and a smaller culvert was placed in the ditch adjacent to highway 80 on Turkey Track Road.

A 300 yard long low dike was built below Structure 31 to divert water east into upper Canfield farm unit.

2. Roads and Trails

Bridge was built over water control Structure 13 for Turkey Track Road.

Built two miles of road from Pool 13 structure to highway 80. Gravel needs to be placed yet.

Kingston Township graveled west end of Turkey Track Road and Bewick Trail from Sprague Road scuth. Necedah Township graveled portions of Speedway Road. The Bewick Road washed out near West Yellow farm field unit and is still impassable.

Major brushing and mowing was undertaken on all refuge roads and trails.

3. Fencing and Posting

Wisconsin highway department placed "Road to Necedah Refuge one mile" and "Necedah Refuge" signs along Highway 21. Refuge placed a "Necedah Refuge 2 miles" sign on entrance road at Highway 21.

Four entering-leaving signs were placed on lesser used town roads.

New auto tour directional signs were put out along with some new road signs.

Major work on the walking nature trail included: interpretive signs with new posts, directional signs, and benches.

4. Buildings

Quarters No. 8 work included: picture window installation, underground electric service installation, major electrical rewiring, interior painting, TV aerial installation, small pond construction, and trees around house thinned.

A water conditioner at the well house to raise pH and iron filter at the office were installed and solved the rusty water problem.

New security light was installed at headquarters and power humidifiers were installed in Quarters 11 and the office.

5. Equipment and Miscellaneous

Newly acquired equipment included: riding lawnmower, 14' rotary mower, 84" loader bucket for farm tractor, 10' reversible trip snowplow, and two chain saws.

A mobile dragline, two dump trucks, TD-18 dozer, and tractor-trailer were loaned from Camp McCoy for the fall and winter seasons. There is no rental charge and major maintenance and repairs are done by the Army National Guard at Camp McCoy.

Fifty wooden duck nesting boxes were remodeled and erected. A new refuge leaflet was written up and submitted to the Regional Office in February but no word has been received on the status of the leaflet.

Difficulty with power and telephone service to headquarters was experienced all year. The entire three miles of power line and two miles of the four mile telephone line are scheduled to be placed underground in 1972.

B. Plantings

Corn (23 acres), buckwheat (48 acres), rye (30 acres) for fall browse, and red millet (9 acres) were planted for wildlife by refuge personnel with refuge equipment. None of the crops were harvested as wildlife, especially geese and ducks, made excellent use of all farm crops. Corn not utilized in the upper Canfield unit will be rotary mowed in the spring of 1972 for wildlife utilization then.

Corn seeded was Weathermaster 80-day variety fertilized with 200 pounds/acre of potash and 100 pounds/acre of 15-45-5 and sprayed with Atrazine to control quackgrass. Corn yield was down, approximately 55 bushels/acre, due to raccoon and skunk damage on the seeding and competition from nut sedge and fall panicum grass. Corrective measures will be taken in 1972. Southern corn leaf blight was identified by the County Agent in upper Canfield unit but was not serious.

Buckwheat was excellent with a yield of 25 bushels/acre. Seeding rate was 1 bushel/acre fertilized with 100 pounds/acre of 22-11-11. The millet was poor and was rotary mowed before reaching maturity. Rye was planted the third week of August, possibly to late on light soils, at the rate of 1 bushel/acre and fertilized with 100 pounds/acre of 18-46-00.

Following is a summary of 1971 crops grown by farm unit:

	Corn	Buckwheat	Rye	Millet
Upper Canfield	6 e	20 e		
Middle Canfield	8 f	20 e	7 p	
Lower Canfield		8 f		9 p
Irontop	4 p		8 e	
West Yellow	5 p		8 f	
Williams			4 p	
Blair			3 e	
	23	48	30	9

e = excellent yield
f = fair
p = poor

C. Collections and Receipts

Nothing to report.

D. Control of Vegetation

Atrazine was used to control unwanted vegetation in corn at the rate of 2 pounds/acre. This controlled quackgrass but not nut sedge or fall panicum. An agronomist from the University of Wisconsin was contacted and the following were his recommendations to control nut sedge and fall panicum: pre-emergents - 2 1/2 quarts/acre LASSO EC for the control of fall panicum, witchgrass and crabgrass. Post emergence - 2 1/2 pounds/acre Aatrex applied with 80 gallons water and 1 gallon/acre crop oil for the control of nut sedge. This will be used in 1972.

Invasion by jack pine, aspen and willow into forest openings is a never ending problem. Prescribed burning and rotary mowing are used to control brush. This year the mowing was speeded up by the purchase of a 14 foot rotary mower. A total of 303 acres were mowed on the following fields: Miller, Irontop, Canfield, Parham-Becker, Williams, Laske, and West Yellow farm field. Prescribed burning is covered in the next section.

E. Planned Burning

To restore part of the refuge to what it once was, a sand prairie, good summer burns are essential. The reason being that only in the

summer can oak and aspen sprouts be discouraged. Spring and fall burns appear to stimulate woody growth. This past summer good weather never did materialize. Every third or fourth day a little rain fell causing the fine fuel to retain its moisture. The fine fuel carries the fire to the larger fuels thus creating enough heat to kill the above ground portion of the sprouts. After killing the above ground part of the sprout with three or four burns, root reserves will be used up causing the entire root system to die.

Only 535 acres of the 2,500 acres scheduled, were burned in 1971 because of unsuitable August weather. Areas where burns were attempted in August will more than likely have to be burned again in 1972. Over 350 acres were burned in the spring and fall for hazard reduction and for clean up of previously burned areas. Grass strips in the farm fields were burned prior to the fall migration for goose browse. These strips were well used again this year. Average cost per acre on controlled burning rose from $.38 in 1969 to $1.66 in 1970 and to $1.73 in 1971. The increase is nearly the same but the reasons are the exact opposite. In 1969 burning conditions were ideal and large acreages were burned with no control problems. In 1970 an extreme drought during the summer made burning ideal but control was very difficult. Many man hours were spent on over-night guarding. In 1971, constant rain prevented fires from carrying, thus, many man hours were spent re-lighting. Hopefully 1972 will be more like 1969.

The following table shows each controlled burn and corresponding weather and cost data:

Date	Area	Acres	Temp.	Wind	Spread Index	Build-up Index	RH	Total Cost	Cost/ Acre
4/14	1	29	54	6	26	22	60	$141.01	$4.86
4/15	2	12	70	18	47	25	35	27.18	2.27
4/15	3	1.5	70	18	47	25	38	8.52	5.68
4/19	4	90	65	10	24	23	55	196.83	2.19
4/23	5	12	66	12	55	35	19	25.66	2.14
8/6	6	13	80	5	21	33	42	27.35	2.10
8/9	7	35	89	12	14	39	56	76.08	2.17
8/13	8	90	90	10	14	39	63	130.02	1.44
8/27	9	44	72	8	18	25	65	43.99	.99
10/14	10	18	68	13	48	26	40	74.82	4.16
10/15	11	188	69	12	42	27	42	172.17	.92
Totals:		535						$923.63	1.73

F. Fires

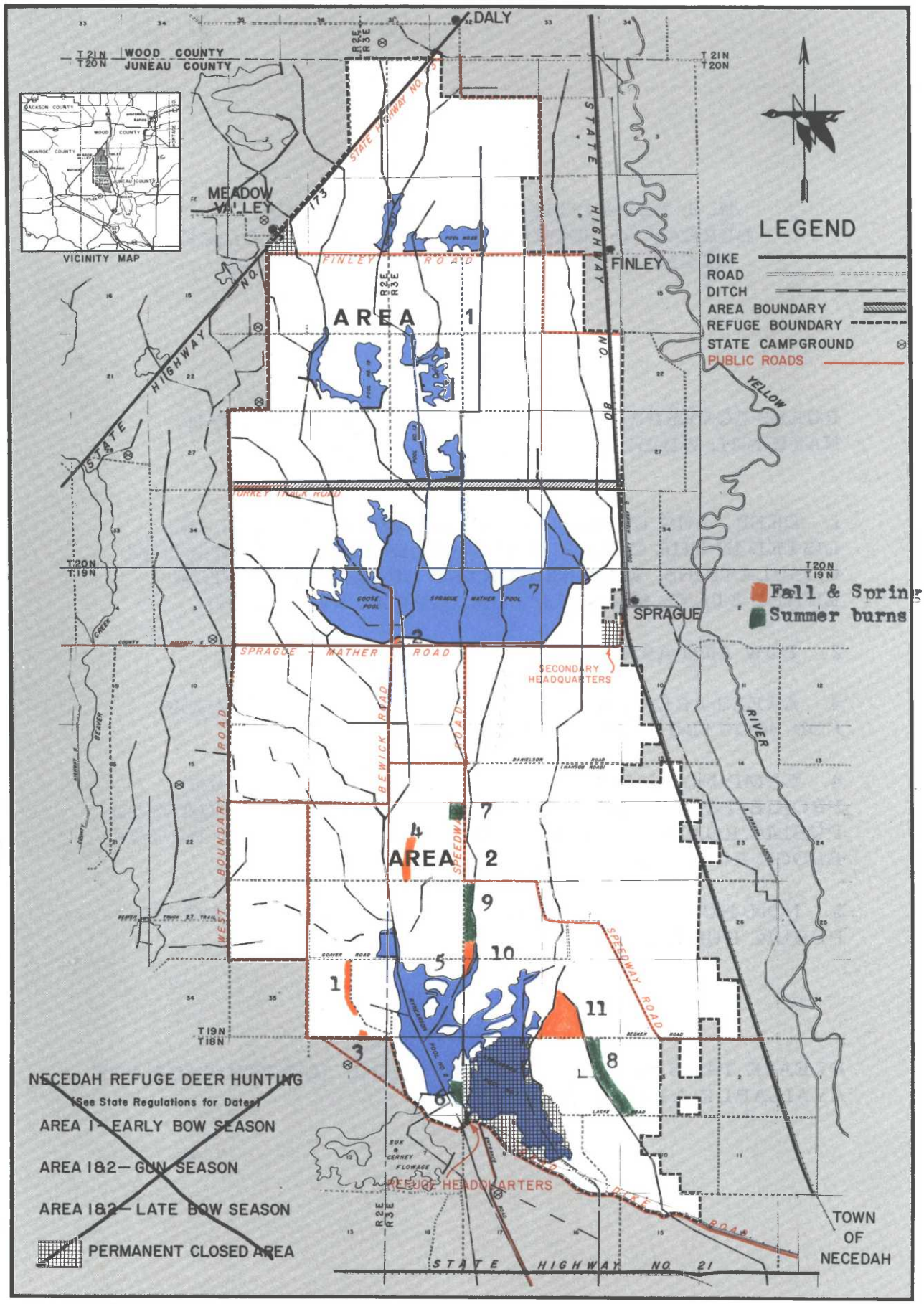
Nothing to report.

NECEDAH NATIONAL WILDLIFE REFUGE

JUNEAU COUNTY, WISCONSIN

UNITED STATES
DEPARTMENT OF THE INTERIOR

FISH AND WILDLIFE SERVICE
BUREAU OF SPORT FISHERIES AND WILDLIFE



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TOWNSHIP DIAGRAM

U. S. DEPARTMENT OF THE INTERIOR
BUREAU OF SPORT FISHERIES AND WILDLIFE
NECEDAH NATIONAL WILDLIFE REFUGE
WISCONSIN

RULES COVERING DEER HUNTING ON THE NECEDAH NATIONAL WILDLIFE REFUGE:

1. DEER, AND UNPROTECTED MAMMAL SPECIES AS LISTED IN THE CURRENT WISCONSIN BIG GAME HUNTING REGULATIONS, MAY BE HUNTED DURING THE ESTABLISHED STATE SEASONS. ALL STATE LAWS APPLY.

2. BOW AND ARROW ONLY DURING BOW SEASONS.

3. AREAS ARE OPEN ONE DAY BEFORE EACH SEASON FOR SCOUTING AND LOCATING A STAND.

4. CAMPING, OVERNIGHT PARKING AND FIRES ARE PROHIBITED. VEHICLES MAY TRAVEL ONLY DESIGNATED PUBLIC ROADS (SHOWN IN RED ON MAP). PLEASE DO NOT BLOCK ROADS OR GATES.

5. NON-HUNTERS ARE PERMITTED ON AREAS OPEN TO PUBLIC HUNTING.

PLEASE TAKE YOUR LITTER WITH YOU. LITTER BAGS ARE AVAILABLE AT HEADQUARTERS.

IV. RESOURCE MANAGEMENT

A. Grazing

None to report.

B. Haying

Nothing to report. An effort was made to get haying permittees but there was no interest.

C. Fur Harvest

Four applications were received for the 1971-72 trapping season. For the first time, a fee of $25 per unit was charged and the trapper kept all the fur. The mink-muskrat season was November 8 - December 31 with excellent trapping conditions. Prices, and catch, were up considerably with muskrat averaging $1.75, mink $10.00, raccoon $8.00, and fox $12.00. Trappers were restricted so disturbance to waterfowl was minimal. Matt Jordan drove his vehicle into the refuge on opening weekend of the gun deer season, a refuge rule violation, so will not be permitted to trap during the 1972-73 season.

Beaver are numerous and create excellent waterfowl habitat in this area. The January season was too short and with deep snows, few beaver were removed. Following is a summary of 1971 refuge fur removals by trapper:

Trapper	Unit	Muskrat	Mink	Raccoon	Fox	Coyote	Beaver
Louis Nowicki	1	167	3	16	1	2	3
Matthew Jordan	2	300	3	8	3		7
John Bagnowski	3	110		2			7
Don Pech	4	60	3	5			16
		637	9	31	4	2	33

D. Timber Removal

There were 19 permits in force during 1971. Revenue received from forest products amounted to $34,317. This is an increase of $5,000 over 1970. Total cordage removed was 4,448 cords. Forest products are broken down in the following table:

Species	Cords	Revenue	Average price/cord
Jack pine	3,600	$33,532	9.31
*Oak	60	90	1.50
*Aspen	695	695	1.00

* 38 cords of oak and 56 cords of aspen were included in Permit No. 71-6 at no charge due to poor market conditions.

The amount and the species of wood that can be sold is related directly to the needs of the paper mills in the local area. This past year the market was virtually unlimited on jack pine while the market for aspen and oak was nearly non-existent. This is reflected in the average price/cord on jack pine. The high bid received on jack pine was $10.50 or about $4.00 over last years average.

One of the most important browse species in this area is aspen sprouts. If the market does not improve this year it will be necessary to either cut or shear small and scattered areas for browse. In past aspen sales, almost 100% of the sprouts have shown signs of browsing.

Most of the timber sales were in prairie restoration areas where all merchantable timber was removed. Here again aspen and oak were not merchantable so these species had to be knocked down with the refuge rolling chopper or by chain saws. There is some talk of moving a chipper mill into the area. If this does happen, there should be better utilization of all species.

There is an ever present trend toward mechanization for all forms of hand labor. The logging operation is no exception. Two years ago (NR-1969) a mechanical tree harvester was tried with very limited success. This year there was a new twist to the same old game. Two tree length skidders ($22,000 each) brought logs to a slashing machine ($24,000) that cut the trees into 100 inch lengths and decked the wood (see photo section). From the decks two trucks ($16,000 each) hauled wood to the mill. Because of the size and density of trees, the whole operation cost about twice the amount that hand cutting does and did not produce any more cordage per man hour.

One problem occurred when Denis Nowicki, Permit No. 71-1, failed to harvest as many cords of wood out of his sale as he had bid on. The wood was sold on a lump sum basis for the entire block with only an estimated cordage given. Nowicki got Leo Bloczynski to finance the sale with the stipulation Bloczynski could haul all the wood. When the sale ran short of the bid amount Bloczynski was out the money. On Bloczynski's next sale, Permit No. 71-6, he hired Nowicki to do the cutting and skidding for him. Bloczynski hauled this wood and then deducted his loss from the previous sale from Nowicki's pay. There was some name calling and threatened legal action against both the refuge and Bloczynski but nothing materialized.

Other problems of completion dates, road damage, and compliance with regulations occurred from time to time during the year. None of these are serious but could be if left unattended.

E. Commercial Fishing

Nothing to report.

F. Other Uses

One permit was issued for the taking of snapping turtles to John Hinitt of Onalaska. There was no charge for this permit.

Two permits were issued to keep beehives on the refuge. A charge of 10¢ per hive for 30 hives was made. Permittees were Joe Haske, New Lisbon, and Kenneth Peck, Wisconsin Dells.

V. FIELD INVESTIGATION OR APPLIED RESEARCH

A. Banding

Two wood duck and two hooded merganser females were banded in artificial nest boxes during early May. Wood ducks were banded from boxes 26 and 49 and mergansers from boxes 46 and 48.

No quotas were received this year, but 25 wood ducks were banded upon State request. The State DNR apparently could not fill their quota. Age/sex data are shown in the following table:

Species	Adults M	Adults F	Immatures M	Immatures F	Total
Wood duck	7	5	7	6	25

B. Artificial Waterfowl Nest Structures

After terminating this program in 1969, the fiberglass goose nesting structures were removed and sent to North Dakota refuges where they may be utilized. This year 10 structures were sent to Slade NWR and 20 to J. Clark Salyer NWR.

VI. PUBLIC RELATIONS

A. Recreational Use

Refuge visits totaled 64,565 during 1971. This is a 20,000 visit increase over 1970, with most of the increase coming from the wildlife observation category. A standard method for measuring public use is now being implemented. The data gathered during 1972 will serve as a basis for future public use monitoring.

Late archery season hunter activity hours continue to decline because a concentration of deer is no longer provided for these hunters. Early archery season activity increased, especially on weekends, throughout the season.

Blueberry picking activity increased five-fold due to a lack of mosquitoes and good numbers of berries above Rynearson 1 Pool. Up to 50 pickers invaded areas on weekends. During the week this activity provides many hours of enjoyable recreation for local residents. The berries are by far more abundant on the prescribe burn areas, thereby giving public favor to the burning program. Berry picking is expected to increase as the burning program advances.

Snowmobile problems were negligible as machines kept mostly off the refuge. However, by the end of 1971 individuals began asking the Necedah town board to open town roads, including those within the refuge. State law does not permit town boards to open roads to snowmobiles at present but the State Attorney General ruled that the legislation was intended to give town boards road opening power. For the 1971-72 winter, the Necedah town board has decided not to open roads on advice of their lawyer; liability may also be a factor.

Refuge lands will not be opened to snowmobile use and hopefully town roads within the refuge will remain closed. Refuge snowmobile use would be in direct competition with winter wildlife needs and higher output producing objectives. Use on town roads would have detrimental effects plus create enormous enforcement problems.

The snowmobilers main desire is access to the Potter's Flowage area from Necedah, now that Meadow Valley wildlife area, the refuge, and all town roads are closed to their use. Wisconsin DNR has issued a permit for an authorized trail across Meadow Valley to Potter's Flowage. Trail work is scheduled to begin in March 1972. This trail will satisfy most snowmobile use but individuals will still ask that town roads within the refuge and refuge lands be opened to snowmobiles.

B. Refuge Visitors

Date	Name	Organization	Purpose
3/3	Roger Nelson	Benson Wetlands Office	Equipment transfer
3/4	Don Haines	USFS-NCFES St. Paul	Prescribed burning
3/26	Fritz Krege	Sand Lake NWR, So. Dak.	Equipment transfer
4/26	Jim Lennartson	Seney NWR, Mich.	Visit
5/6	Omer Doran	Seney NWR, Mich.	Visit
5/12	John Winship	Div Ref. Mpls. Minn	Breeding pair count
6/7	Jim Monnie	Div. Ref. Mpls. Minn.	RBU-Objectives
"	Gilbert Key	" "	"
6/8	Ron Sando	USFW-NCFES-St.Paul	Burning Plots
6/17	Dr. Wm. E. Green	Upper Miss. Ref. Minn.	Inspect Burn Plots
6/23	Ken MaCarthur	Curator-Milwaukee Mus.	Butterfly Collection
8/9	Don Johnson	Milwaukee Sentinel	Visit for story
8/17	Ed Murczk	Seney NWR, Mich.	Visit
9/2	Dave Ostergard	Genoa Fish Hatchery	Obtain minnows
9/13	Rod Sando	USFW-NCFES-St. Paul	Prescribed burning

Date	Name	Organization	Purpose
9/14	A. J. Karash	U of Wis Ext. Juneau Co.	Inspect corn-weeds
	Ron Doersch	U of Wis Agronomist	"
10/12	Ed Landin	Environ. Science Center	EE Program
10/13	Wm. Rollmann	DNR-Madison, Wis.	Visit
	Don Beghin	" "	"
10/20	Gilbert Key	Div Ref. Mpls. Minn.	Enroute to Horicon
	Dwight R. McCurdy	Wash. Office	"
10/27	Frank Eustis	U. of Wis.	Visit
11/4	Ben Chio	Upper Miss NWR	Lumber for signs
	Duncan Green	"	"
11/4	Frank King	Wis DNR-Game Mgmt Madison	Hunting programs
11/4	Clair Rollings	Div of Ref. Mpls. Minn.	S & M Program
12/8	Gilbert Key	" " Public Use Spec	Public Use

Frequent Miles Camery, USGMA, Madison, Wis.
Roger Priest, USGMA, Eau Claire, Wis.
Ben Little, Wis DNR, Warden, Mauston, Wis.
Bud Smith, Wis. DNR, Mgr. Meadow Valley Area

C. Refuge Participation

1/18 Updike gave radio talk on refuge over radion Station WRJC,Mauston.

1/21 Updike gave talk to 25 biology students from Miliken University, Illinois, staying near Necedah.

1/28 Updike talk to Leon PTA, 40 people present

1/26 Rudolph to clerk's workshop at regional office

2/3 Updike to LaCrosse for Project SOAR meeting.

2/8-12 Rudolph to wing-bee at Poynette

3/22 Hocutt radio talk re: National Wildlife Week, WRJC Mauston

3/29 Updike to Winona, Minn. workshop on objectives setting

4/6 Rudolph attend annual Town of Necedah meeting

4/21 Updike showed slides to 15 members of Necedah Woman's Club

4/21 Updike showed slides to 120 people at Necedah Area Improvement Association meeting.

5/12 Updike showed movie to Tomah Conservation Club members

5/16 Johnson gave tour of refuge to 21 members of Pack 110 Cub Scouts, Wisconsin Rapids.

5/16 Hocutt gave talk and tour to 15 4-H students and sponsors from Wautoma.

5/21 Johnson gave tour to 14 conservation class members from Mauston high school.

5/24 Hocutt gave a slide talk to the Juneau County Tavern Keepers Association.

6/14 Tour of refuge to 42 4-H Award winners from throughout Wisconsin; tour sponsored by U. of Wis. Extension Service.

7/22 Ehlers gave tour of refuge to 37 Junior High School students from Monona, Wis.

9/15 Enforcement meeting held at refuge office for federal and state wardens on fall hunting regulations.

10/5-8 Updike, Ehlers, Johnson and Rudolph to Winona, Minnesota for PPBE workshop.

10/5 Carter gave tour to 42 members of Coon Valley Senior Citizens Group.

10/11 Johnson showed movie to New Lisbon Methodist Men's Club.

10/12 Updike conducted adult vocational education class on wildlife management at Necedah High School.

10/18 Updike gave tour to 85 biology students from Kickapoo High School.

11/13 Rudolph gave talk and tour to 17 members of the Milwaukee YMCA Voyager Group.

11/13 Updike gave talk and showed slides to Winona Bird Club.

11/18-19 Updike attend PPBE workshop at Minneapolis, Minnesota

12/16 Johnson spoke to the Minnesota Chapter of the Wildlife Society at St. Paul, Minnesota.

D. Hunting

Excellent ruffed grouse hunting occurred throughout the 90 day season in central Wisconsin. Puddle duck hunting was fair, much better than in 1970, with wood ducks and mallards providing most of the shooting. Diver duck hunting was very poor on all waters in this area.

Best duck hunting occurs on small private lands with crop and water developments.

Canada goose hunting is the big attraction here. Hunters were numerous throughout the 70 day season on the state operated "firing line" south of refuge headquarters. Geese were making daily flights to farms south of Highway 21 before the October 2 noon opening. With 950 hunters on the "firing line" between the refuge and private farms the geese quickly changed their flight pattern and fed mostly on the refuge. State counts showed 1,400 hunters, most of them on the east two miles of the "firing line", on the morning of October 3. Goose kill for this area was estimated at 350 Canada geese (200 on the "firing line", 100 on local farms, and 50 on lands west and north of the refuge). This compares with a kill of 400 in 1970 and upwards of 2,000 in past years. Hunting quality is very low and changes in the Necedah area goose hunting program are drastically needed.

The early archery deer season (9/18 - 11/14) on the north portion of the refuge attracted 550 hunters on opening day (down 20% from 1970). However, more hunters were recorded on week days and later weekends than in the past. Few deer, probably less than 20, were taken but quality and enjoyment of the outdoors are at their best.

Wisconsin's nine day gun deer season was November 20 - 28 with all but a small portion of the refuge open. There were 1,800 hunters for the opening (same as 1970) and the season kill was 275 deer. Hunter activity decreased the last three days as heavy snow fell. One accident occurred when Jake Jasinski (21 of Necedah) shot Bob Pouillie (18 of Necedah) in the leg while wiping snow from his rifle. Flesh was torn away but Pouillie has recovered. Hunter numbers, distribution, and deer kill appear to be in good balance at present.

Late archery deer season (12/4 - 31) attracted 1,300 hunters opening day (down 65% from 1970). Very few hunters were present after the opening morning. With the 1970 refuge season change, only 11 deer were registered and the opening day mass of hunters should continue to decrease next year.

E. Violations

Problems of trespass and hunting in closed areas were minimized this year due to better signing and increased patrols. Federal cases, for the first time, were taken before U.S. Magistrate Patrick Crooks at Wausau and all other cases were turned over to State Game Warden Ben Little. The following page contains a summary of cases made by refuge personnel and cases made on the refuge during 1971:

			Violation	Fine	
5/9	Thomas A. Poeschel	Wisconsin Rapids, Wi	Fish closed area	$ 50*	Hocutt
5/9	Kenneth G. Tork	Wisconsin Rapids, Wi	Fish closed area	50*	Hocutt
5/15	George M. Lukasiewicz	Chicago, Il	Fish closed area	50*	Hocutt
5/15	Frank G. Frantell	Mundelein, Il	Fish closed area	50*	Hocutt
5/15	Paul L. Locuss	Mundelein, Il	Fish closed area	50*	Hocutt
5/15	Walter P. Cheslog	Mundelein, Il	Fish closed area	50*	Hocutt
5/30	Sandra Carey	Hobart, Il	Fish closed area	50*	Hocutt
5/30	Robert Carey	Hobart, Il	Fish closed area	50*	Hocutt
5/30	Marion Mazurkiewicz	Cicero, Il	Fish closed area	50*	Hocutt
5/30	Guido Melone	Cicero, Il	Fish closed area	50*	Hocutt
7/22	Everett Hartley	Tomah, Wi	Vehicle in closed area	25*	Updike
7/24	John L. Nowicki	Necedah, Wi	Vehicle in closed area	25*	Updike
9/18	John W. Fitch	Kenosha, Wi	Hunt bow closed area	34	Johnson
9/18	James K. Gourley	Kenosha, Wi	Hunt bow closed area	34	Carter
9/19	Charles M. Hosnadl	Hillside, Il	Trespass	25*	Johnson
9/19	Walter J. Magiera	North Lake, Il	Trespass	25*	Johnson
10/23	Robert Schmidt	Port Edwards, Wi	Hunt geese on refuge	juv	Ehlers
10/23	Randall Derniek	Stevens Point, Wi	Hunt geese on refuge	34	Ehlers
10/24	Gary Merrinette	Elmhurst, Il	Fraud in obtain license	109	Ehlers
10/24	Gregory Wegler	Elmhurst, Il	Fraud in obtain license	109	Ehlers
10/24	Bruce Hradek	Elmhurst, Il	Hunt bow without license	59	Ehlers
10/26	David Riel	Waupun, Wi	Hunt geese on refuge	34	State Warden
10/28	Dennis A. Rennel	Adams, Wi	Hunt grouse on refuge	34	Johnson
10/28	William R. Bonovoc	Friendship, Wi	Hunt grouse on refuge	34	Johnson
10/29	Thomas W. Fritter	Madison, Wi	Hunt squirrel on refuge	34	Carter
11/2	Denis Nowicki	Necedah, Wi	Hunt waterfowl over bait	109	Updike
11/2	Paul Ellison	Oakbrook, Il	Hunt waterfowl over bait	109	Updike
11/2	Fritz Kanarowski	Mauston, Wi	Hunt waterfowl over bait	109	Updike
11/4	Donald D. Miller	Lake Zurich, Il	Hunt bow closed area	34	Ehlers
11/4	Boyd L. Meyer	Barrington, Il	Hunt bow closed area	34	Ehlers
11/16	James C. Olson	Lake Mills, Wi	Trespass	37*	Johnson
11/16	James W. Lewellin	Waterloo, Wi	Trespass	25*	Updike
11/21	Matthew Jordan	Necedah, Wi	Trap w/vehicle/deer season	X	Ehlers
11/22	Harry Samuel Ellingston	Beloit, Wi	Drive vehicle closed area	25*	Rudolph
11/23	Charles E. Robinson	Madison, Wi	Litter	XX	Rudolph
11/23	Daniel L. Eastling	Plainfield, Wi	Hunt deer w/out red hat	19	Rudolph
11/24	Steven Clark	LaCrosse, Wi	Litter	XXX	Carter

* Cases handled in federal court X Jordan lost trapping privilege for 1972-73 for refuge rule violation
XX Attempt being made by GMA Camery to locate Robinson XXX Clark case being taken to State court

F. Safety

Safety meetings were held on the second Monday of every month. Each employee took a turn at conducting the meeting on a chosen or assigned topic. Impromptu meetings were held as hazards arose or when particular work projects were started. The following subjects were discussed at safety meetings:

Defensive driving
Highway safety (Patrolman Bond, State of Wis)
Gun safety
Shop safety
Electric hazards in the home
Fire fighting safety
Chain saw operation (twice)
Farm safety
Motor vehicle and heavy equipment operations
Operation of new rotary mower
Operation of new lawn mower

Each driving and surviving tip was read and discussed as it arrived or at the following safety meeting.

No accidents occurred during this period. This is remarkable considering the hazardous nature of the maintenance and development work. As of December 31 this station safety record was 1,308 days with no lost time accidents.

VII. OTHER ITEMS

A. Items of Interest

Bob Arrowsmith, engineering equipment repairer, retired in May with over 30 years of federal service on LaCreek, J. Clark Salyer, and Necedah Refuges. Bob was excellent at solving major equipment and maintenance problems. He is going full time now with driving school bus, maintaining the Necedah school buses, and automotive repair. He and wife Martha have a shop and small farm near Necedah.

Gene Hocutt transferred to the Madison, South Dakota, Wetlands Office as assistant manager in June. Brad Ehlers, a graduate of Minnesota and Vietnam veteran, replaced Gene by transferring from F.A.A. in Minneapolis. Brad and wife DeDee, married in July, live in the refuge house at Sprague.

Vern Rudolph received an Outstanding Performance Award for his work during 1970 and part of 1971. Al Johnson received the region Public Service Award for his work with the Necedah youth. Jerry Updike received an award for his suggestion of a display board and Gene Hocutt received an award for his dove and duck trap design. Two other suggestions were rejected.

New additions include a daughter to the Johnson's in June, Jennifer, and daughter to the Updike's in August, Janet. The Johnson's moved into a new home near Necedah in December.

Clyde Bourgard and Greg Domke, both of Necedah, were hired and paid by the Central Wisconsin Community Action Center and worked on the refuge under the NYC program. They accomplished many of the minor maintenance clean up tasks that never seem to get done. Both have returned to high school.

B. Photographs

The photographer's name and the station photo number are listed under each photo.

Credits:	Updike	III A-B-C; IV C; VI D-E; VII A Editing
	Ehlers	I B; II; V; VI A
	Johnson	III D-E-F; VI F
	Rudolph	I A; VI B-C typing, photo mounting, assembly

SIGNATURE PAGE

Submitted by:

Gerald H. Updike
(Signature)

Gerald H. Updike
Refuge Manager
Title

Date: February 22, 1972

Approved, Regional Office:

Date: FEB 2 9 1972

James B. Monnie
(Signature)

ASST
Regional Refuge Supervisor

R3-454
(9/68)

Refuge Staff at end of 1971: (front row l to r) Brad Ehlers, assistant manager; Harry Carter, maintenanceman; Vern Rudolph, clerk; (back row l to r) Jerry Updike, manager; Al Johnson, forester; and Paul Woggon, maintenanceman

Vern Rudolph received a Special Act Award for outstanding work performance in 1970-71. Sons Gene, Leo, and Earl look over dad's award and check. April 71-4-5 Updike

Bob Arrowsmith retired in May with over 30 years of refuge service in the Dakotas and Wisconsin. He and Martha will remain on their farm near Necedah. May 71-10-1 Updike

Red-tailed hawk perched on 10' of public observation tower as Milwaukee Sentinel photographer took its picture. Same semi-tame hawk spent most of the summer around headquarters.
June 71 Dan Johnson - Milwaukee Sentinel

White-tailed deer production was excellent considering the hard winter. This photo was used in news articles telling people not to take wildlife young from the woods.
June 71 Rich Zorbaek Mauston Newspapers

Ruffed grouse were at a high level and males could be seen drumming on logs adjacent to refuge roads. Grouse add much to wildlife observation on the refuge. File photo

Prairie chickens at Necedah? Not now although Hamerstroms manage a flock only 40 miles away. There were many here in the '40's and a reintroduction may be possible as the prairie restoration program continues. April 71-5-2 Updike

Greater Sandhill Crane nest on upper Rynearson 1 Pool. Nest observed on May 6 but fate unknown as no other trips were made to the site. May 71-5-15 Updike

Snow-blue geese, Canada geese, and sandhill cranes made excellent use of the drawn-down Rynearson 1 Pool. Wildlife observation increased many times as people came to enjoy the view and hunters wanted "to get at 'em". October 71-9-3 Updike

Great blue heron nest at Sprague Pool rookery looked good in May. Two to five eggs were counted in every nest that could be seen into. Following page shows severe problems at rookery this year. May 1971 Richard Zorbaugh

Many Sprague Pool blue heron nests fell victim to severe wind storms. Only 18 of 250 nests counted in 1960 remain. Plans are to remove pines and kill oak trees on islands adjacent to the rookery. June 71-6-15 Updike

Blue heron nestlings (60) died in late June just before reaching flight stage. Die-offs have occurred other years but no explanation has been found. Specimens were not fit for analysis. June 71-6-4 Updike

Manager Updike removing hooded merganser from nest box for banding. Four hens were banded and 10 boxes used the first year by wood ducks and mergansers. Fifty wooden boxes were repaired and relocated for easier checking and maintenance. The side door was a major improvement in the servicing operation. May 1971 Richard Zorbaugh

Heavy snows (80" total) required much time in keeping roads open. Old 6x6 moves a lot of snow but is a real beast to keep going. February 71-1-19 Updike

The prairie is nice to have despite snow drifting problems. Hopefully nobody will ever plant trees here to reduce wind movement. February 71-2-4 Updike

Prairie restoration above Sprague Pool (looking east from Structure 13). Good road is a must for fire control and after a few burns the slash will be gone and the grassland back. September 71-8-10 Updike

New 14' rotary mower saved many manhours as machine cuts six acres per hour. Forest openings are mowed at least every fourth year to keep trees from invading. August 71-8-8 Updike

Al Johnson cruising jack pine from Ranger. Over 4,400 cords of wood were removed to improve wildlife habitat on 750 acres. January 71-1-5 Updike

Chipper demonstrated in Madison. Machine takes entire tree and chips are transported to the mill for processing, thereby, reducing present waste in the woods. November 71-7-9 Updike

One logger went to skidding tree length logs to a mobile slasher. A second skidder even had cutter attached and the only chain saw work was on limbing and topping.
March 71-3-10 Updike

Slasher cutting trees into 100" sticks and decking the pulp. Operation is fine but interest on equipment and low density of good pine here forced the logger back to the chain saw.
March 71-3-2 Updike

Oak-jack pine woods before being cut and reverted back to prairie. Nearly 6,000 acres of refuge habitat will be maintained as prairie through fire similar to what it was 30 years ago.
April 68-3-2 Brown

Prairie area after initial August 1970 burn showing vigorous stand of grasses and forbs coming in. Future burns will maintain vigor and keep woody plants from reinvading.
June 71-6-7 Updike

Prairie area (section 28 - Sprague Pool) burned in August 1970. Summer burns kill woody vegetation best, retard sprouting, and help grasses and forbs get started. Warm season grasses do well following August burns. September 71-8-0 Updike

Prairie area (section 28) burned in December 1969. Late fall or early spring burns look good but fail to retard sprouting as plants are dormant. Summer burns are needed to maintain a prairie. September 71-8-1 Updike

Even with deep snow and a short season, trappers who really worked came up with good beaver catches. Four trappers removed 33 beaver in January. February 71-1-11 Updike

Blueberries and an enjoyable family outing are results of the prescribed burning program. Many local families took advantage of the excellent blueberry crop. July 71-8-4 Updike

Wisconsin Bowhunters Association holds it's fall weekend outing just south of headquarters. This year over 350 shot the target course for highest score. This is a high quality family type recreation. September 1971 Richard Zorbaugh

Where are those "big honkers"? Poor quality goose hunting along five miles of state operated "firing line" near the refuge results in much heated discussion over who shot the goose. A peak of over 1,400 hunters crowd this narrow grown over line to fire away at geese usually out of range. October 1971 Richard Zorbaugh

Some visitors come to kill something, some to watch wildlife, and some to just plain get dirty.
July 71-8-11 Updike

Rustic entering-leaving signs were placed where town roads enter the refuge. Many old broken signs were removed.
December 71-9-10 Updike

3-1750
Form NR-3
(Rev. March 1953)

WATERFOWL

REFUGE Mecedah MONTHS OF Jan 1 TO April 30, 19 71

(1) Species	(2) Weeks of reporting period									
	1/ 1-2	1/3-9	1/-310-16	1/417-23	1- 523-30	1/3 6-2/6	2/7 7-13	2/11 8-20	2/21 9-27	2/28 10-3/6
Swans:										
Whistling				WATER AREAS FROZEN						
Trumpeter										
Geese:										
Canada										
Cackling										
Brant										
White-fronted										
Snow										
Blue										
Other										
Ducks:										
Mallard										
Black										
Gadwall										
Baldpate										
Pintail										
Green-winged teal										
Blue-winged teal										
Cinnamon teal										
Shoveler										
Wood										
Redhead										
Ring-necked										
Canvasback										
Scaup										
Goldeneye										
Bufflehead										
Ruddy										
Other										
Coot:										

Int. Dup. Sec., Wash., D.C. 37944

3-1750a
Cont. 1-1
(Rev. March 1953)

WATERFOWL
(Continuation Sheet)

REFUGE Necedah MONTHS OF January 1 TO April 30, 19 71

(1) Species	(2) Weeks of reporting period: 3/7-13 (11)	3/14-20 (12)	3/21-27 (13)	3/28-4/3 (14)	4/4-10 (15)	4/11-17 (16)	4/18-24 (17)	4/25-30 (18)	(3) Estimated waterfowl days use	(4) Production: Broods seen	Estimated total
Swans:											
Whistling				40	270	50	5	5	2,585		
Trumpeter											
Geese:											
Canada	10	125	700	2,500	5,500	3,500	500	250	91,345		
Cackling											
Brant											
White-fronted											
Snow & Blue					50	25			525		
Other											
Ducks:											
Mallard	10	200	250	1,000	2,000	1,800	1,000	650	47,720		
Black		10	20	100	150	100	50	50	3,310		
Gadwall					50	20			490		
Baldpate				10	175	100	25	10	2,230		
Pintail				50	175	150	20		1,765		
Green-winged teal			50	200	450	400	200	150	10,000		
Blue-winged teal				300	750	600	400	250	15,850		
Cinnamon teal											
Shoveler				10	75	50	10		1,015		
Wood			10	50	150	100	100	50	3,170		
Redhead					40				280		
Ring-necked	5		25	300	800	500	150	25	12,610		
Canvasback											
Scaup				150	275	150	50	20	4,495		
Goldeneye	10	25	100	300	420	400	100		9,485		
Bufflehead	5		20	200	300	150	25		4,900		
Ruddy											
Other Hooded Merganser	5		50	150	200	100	50		3,885		
Coot:			5	50	175	100	50	50	2,960		

(over)

	(5) Total Days Use	(6) Peak Number	(7) Total Production
Swans	2,585	270	
Geese	91,870	5,550	
Ducks	121,205	6,010	
Coots	2,960	175	

SUMMARY

Principal feeding areas Tynesreen 1 & 2 Pools, Sprague Pool; Agricultural Units.

Principal nesting areas

Reported by Grady E. Hocutt, Ass't. Refuge Manager

INSTRUCTIONS (See Secs. 7531 through 7534, Wildlife Refuges Field Manual)

(1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and national significance.

(2) Weeks of Reporting Period: Estimated average refuge populations.

(3) Estimated Waterfowl Days Use: Average weekly populations x number of days present for each species.

(4) Production: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.

(5) Total Days Use: A summary of data recorded under (3).

(6) Peak Number: Maximum number of waterfowl present on refuge during any census of reporting period.

(7) Total Production: A summary of data recorded under (4).

Inte r Duplicating Section, Washingt D. C.
1953

3-1750
Form NR-[illegible]
(Rev. M[illegible]h 1953)

WATERFOWL

REFUGE Necedah MONTHS OF May 1 TO August 31, 19 71

(1) Species	(2) Weeks of reporting period 1 (5/1-8)	2 (5/9-15)	3 (5/16-22)	4 (5/23-29)	5 (5/30-6/5)	6 (6/6-12)	7 (6/13-19)	8 (6/20-26)	9 (6/27-7/3)	10 (7/4-10)
Swans:										
Whistling	2									
Trumpeter										
Geese:										
Canada	500	125	120	125	130	145	165	175	180	190
Cackling										
Brant										
White-fronted										
Snow										
Blue										
Other										
Ducks:										
Mallard	700	650	700	700	700	800	900	1,000	1,200	1,400
Black	70	60	70	70	70	80	90	100	120	150
Gadwall	10	10								
Baldpate	20	20								
Pintail										
Green-winged teal	200	150	150	150	170	180	200	250	275	290
Blue-winged teal	400	300	300	300	300	375	475	600	650	700
Cinnamon teal										
Shoveler										
Wood	250	200	200	200	200	210	220	230	240	300
Redhead										
Ring-necked	300	20	10	10	10	10	15	20	20	20
Canvasback										
Scaup										
Goldeneye										
Bufflehead										
Ruddy	5	5								
Other Hooded Merganser	50	50	50	50	50	65	75	90	90	90
Common merganser	10	10								
Coot:	50	10	5	5	5	5	5	5	5	5

Int. Dup. Sec., Wash., D.C. 37944

3-3750a
Cont. R-1
(Rev. March 1953)

WATERFOWL
(Continuation Sheet)

REFUGE Necedah MONTHS OF May 1 TO August 31, 19 71

(1) Species	(2) Weeks of reporting period 7/11-17 (11)	7/18-24 (12)	7/25-31 (13)	8/1-7 (14)	8/8-14 (15)	8/15-21 (16)	8/22-28 (17)	8/29-31 (18)	(3) Estimated waterfowl days use	(4) Production Broods seen	(4) Production Estimated total
Swans:											
Whistling											
Trumpeter									16		
Geese:											
Canada	190	190	190	195	280	420	315	430	28,780	7	50
Cackling											
Brant											
White-fronted											
Snow											
Blue											
Other											
Ducks:											
Mallard	1,400	1,400	1,400	1,400	1,600	1,945	2,360	2,200	149,085	8	700
Black	140	140	140	150	160	200	265	250	15,275		70
Gadwall									150		
Baldpate						3	8	80			
Pintail											
Green-winged teal	300	300	300	300	250	200	300	300	35,155		150
Blue-winged teal	700	700	700	710	750	750	780	800	69,230	13	400
Cinnamon teal											
Shoveler											
Wood	300	300	300	450	450	425	440	450	36,005	1	100
Redhead											
Ring-necked	20	20	20	20	20	20	20	20	4,245	1	10
Canvasback											
Scaup											
Goldeneye											
Bufflehead											
Ruddy											
Other Hooded merganser	90	90	90	90	90	90	90	90	75		
Common merganser									9,350		40
									150		
Coot:	5	5	5	5	5	5	5	5	1,325		

(over)

	(5) Total Days Use	(6) Peak Number	(7) Total Production
Swans	16	2	0
Geese	28,780	500	50
Ducks	318,022	4,268	1,470
Coots	1,325	50	0

SUMMARY Rynearson Pool # 1

Principal feeding areas Rynearson Pool #1 and Goose Pool

Principal nesting areas Rynearson Pools # 1 and #2.

Reported by Bradley D. Ehlers, Ass't. Refuge Manager

INSTRUCTIONS (See Secs. 7531 through 7534, Wildlife Refuges Field Manual)

(1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and national significance.

(2) Weeks of Reporting Period: Estimated average refuge populations.

(3) Estimated Waterfowl Days Use: Average weekly populations x number of days present for each species.

(4) Production: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.

(5) Total Days Use: A summary of data recorded under (3).

(6) Peak Number: Maximum number of waterfowl present on refuge during any census of reporting period.

(7) Total Production: A summary of data recorded under (4).

Inte r Duplicating Section, Washingt , D. C.
1953

3-1750
Form NR-1
(Rev. M h 1953)

WATERFOWL

REFUGE NECEDAH

MONTHS OF ~~September~~ TO ~~December~~ 19 ~~71~~

(1) Species / week ending	(2) Weeks of reporting period: 1 9/4	2 9/11	3 9/18	4 9/25	5 10/2	6 10/9	7 10/16	8 10/23	9 10/30	10 11/6
Swans:										
Whistling									6	3
Trumpeter										
Geese:										
Canada	100	340	500	1,580	12,000	11,000	10,000	18,000	14,300	9,100
Cackling										
Brant										
White-fronted										
Snow			3	5	10	10	70	240	640	300
Blue			20	25	40	40	310	960	2,900	1,450
Other										
Ducks:										
Mallard	2,800	1,040	1,160	1,010	1,260	3,000	6,000	8,000	15,000	10,000
Black	280	100	110	100	120	300	600	800	1,500	1,000
Gadwall						100	400	1,000	2,100	100
Baldpate	100	410	1,790	2,540	1,400	2,100	4,500	3,000	2,500	100
Pintail		10	10	50	50	100	450	700	1,100	50
Green-winged teal	300	350	450	100	40	300	150	500	1,100	50
Blue-winged teal	380	670	1,000	370	140	100	50	50	100	
Cinnamon teal										
Shoveler					10	15	20	20	10	
Wood	570	350	330	280	430	300	250	50	50	
Redhead										
Ring-necked	20	20	20	20	20	20	20	100	70	5
Canvasback								1	1	
Scaup					2	2				
Goldeneye										
Bufflehead										
Ruddy										
Other Hooded Merganser					8	8	8	5	2	
	90	90	90	90	90	50	50	10	10	
Coot:	5	200	240	2,400	5,530	5,000	5,000	7,000	9,000	500

Int. Dup. Sec., Wash., D.C. 37944

3-1750a
Cont NR-1
(Rev March 1953)

WATERFOWL
(Continuation Sheet)

REFUGE NECEDAH MONTHS OF September TO December, 19 71

(1) Species / week ending	(2) Weeks of reporting period 11/13 (11)	11/20 (12)	11/27 (13)	12/4 (14)	12/11 (15)	12/19 (16)	12/26 (17)	12/31 (18)	(3) Estimated waterfowl days use	(4) Production Broods: seen	Broods: Estimated total
Swans:											
Whistling			1						70		
Trumpeter											
Geese:											
Canada	4,300	3,460	3,100	450	450	300			622,560		
Cackling											
Brant											
White-fronted											
Snow									8,946		
Blue									40,215		
Other											
Ducks:											
Mallard	400	200	150	120	5	5			342,650		
Black	40	10	5	5	1	1			33,964		
Gadwall									25,900		
Baldpate									128,920		
Pintail									17,640		
Green-winged teal									22,480		
Blue-winged teal									18,880		
Cinnamon teal											
Shoveler									525		
Wood									16,560		
Redhead											
Ring-necked	5	5	5	5	1	1			2,299		
Canvasback	15								119		
Scaup									28		
Goldeneye											
Bufflehead											
Ruddy									217		
Other Hooded Merganser	10	30							4,000		
Common Merganser		10							70		
COOTS	2	1							244,131		

(over)

	(5) Total Days Use	(6) Peak Number	(7) Total Production
Swans	70	6	
Geese	671,721	19,200	
Ducks	614,252	23,543	
Coots	244,131	9,000	

SUMMARY

Principal feeding areas **Flooded corn and buckwheat in Canfield Units, Goose Pool and Pool No. 1**

Principal nesting areas

Reported by **Bradley D. Ehlers, Ass't. Refuge Manager**

INSTRUCTIONS (See Secs. 7531 through 7534, Wildlife Refuges Field Manual)

(1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and national significance.

(2) Weeks of Reporting Period: Estimated average refuge populations.

(3) Estimated Waterfowl Days Use: Average weekly populations x number of days present for each species.

(4) Production: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.

(5) Total Days Use: A summary of data recorded under (3).

(6) Peak Number: Maximum number of waterfowl present on refuge during any census of reporting period.

(7) Total Production: A summary of data recorded under (4).

Interior Duplicating Section, Washington, D. C.
1953

3-1751
Form NR-1
(Nov. 1945)

MIGRATORY BIRDS
(other than waterfowl)

Refuge Necedah Months of January 1 to April 30 1971

(1) Species	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Number
I. Water and Marsh Birds:										
Sandhill Crane	2	3/29	40-50	4/30	Summer	resident				
Great Blue Heron	1	3/22	50-60	"	"	"				
Green Heron	1	4/30	20-30	"	"	"				
American Egret	1	4/30	1	"	1	4/30				
Pied-billed Grebe	1	3/31	40-50	"	Summer	resident				
Horned Grebe	3	4/9	3	4/9	3	4/9				
American Bittern	1	4/29	20-25	4/30	Summer	resident				
II. Shorebirds, Gulls and Terns:										
Killdeer	3	4/5	Common		Summer	resident				
Greater Yellowlegs	6	4/9	"		"	"				
Lesser Yellowlegs	10	4/29	"		"	"				
Least Sandpiper	15	4/29	"		"	"				
Ring-billed Gull	14	3/31	14	3/31	14	3/31				
Herring Gull	2	4/30	2	4/30	2	4/30				

(over)

(1)	(2)		(3)		(4)		(5)	(6)
III. Doves and Pigeons:								
Mourning dove	1	3/27	Common		Summer resident			
White-winged dove								
IV. Predaceous Birds:								
Golden eagle	4	3/29	4	3/29	4	3/29		
Duck hawk (Peregrine)	1	3/17		3/17	1	3/20		
Horned owl	25	Year-around Resident						
Magpie								
Raven								
Crow	75	Year-around Resident						
Bald Eagle	1	3/29	9	4/3	3	4/30		
Broad-winged Hawk	1	2/10	15	3/1	2	4/30		
Rough-legged Hawk	1	2/10	5					
Cooper's Hawk	1	3/20	2	3/29	2	3/29		
Red-tailed Hawk	2	2/28	25	4/30	25	4/30		
Marsh Hawk	1	3/15	20-30	4/30	20-30	4/30		
Sparrow Hawk	1	3/15	25-35	4/30	25-35	4/30		
Goshawk	1	1/19	1	1/19	1	1/19		

Reported by Grady E. Hocutt, Ass't. Refuge Mgr.

INSTRUCTIONS

(1) Species: Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U. order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance. Groups: I. Water and Marsh Birds (Gaviiformes to Ciconiiformes and Gruiiformes)
II. Shorebirds, Gulls and Terns (Charadriiformes)
III. Doves and Pigeons (Columbiformes)
IV. Predaceous Birds (Falconiformes, Strigiformes and predaceous Passeriformes)

(2) First Seen: The first refuge record for the species for the season concerned.

(3) Peak Numbers: The greatest number of the species present in a limited interval of time.

(4) Last Seen: The last refuge record for the species during the season concerned.

(5) Production: Estimated number of young produced based on observations and actual counts.

(6) Total: Estimated total number of the species using the refuge during the period concerned.

INT.-DUP. SEC., WASH., D.C.

59317

3-1751
Form NR-1.
(Nov. 1945)

MIGRATORY BIRDS
(other than waterfowl)

Refuge Necedah Months of May 1 to August 31 1971

(1) Species	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Number
I. Water and Marsh Birds:										
Sandhill Crane	Summer resident		125	8/25	Still present				25	125
Great Blue Heron	"	"	149	8/25	"	"	1	40	2	140
Pied-Billed Grebe	"	"	25	8/25	Still present					25
Green Heron	"	"	60	8/25	"	"				
Common Loon	None sighted									
American Bittern	Summer resident		20	late Aug	Still present					20
Sora Rail	Undetermined									
Virginia Rail	Undetermined									
American Egret	6	5/15	6	5/15	6	5/15				
Black-Crowned Night Heron	Undetermined									
II. Shorebirds, Gulls and Terns:										
Killdeer	Undetermined									
Greater Yellowlegs		"								
Lesser Yellowlegs		"								
Least Sandpiper		"								
Solitary Sandpiper		"								
Spotted Sandpiper		"								
Pectoral Sandpiper		"								
Common Tern	6	5/6								
Black Tern	3	5/14	50	late Aug	30	8/31				50
Herring Gull	2	5/3								
Upland Plover	None sighted									

(over)

(1)	(2)		(3)		(4)		(5)	(6)
III. Doves and Pigeons:								
Mourning dove	Summer resident		500	August	Still present			
White-winged dove								
IV. Predaceous Birds:								
Golden eagle								
Duck hawk								
Horned owl	Year around resident							25
Magpie								
Raven								
Crow	Summer resident		200	late Aug	Still present			200
Bald Eagle			2	7/6				
Osprey	Summer resident		4	July				
Goshawk	"	"			Still present			
Red-tailed Hawk	"	"			"	"		
Marsh Hawk	"	"			"	"		
Sparrow Hawk	"	"			"	"		

Reported by.....
Bradley D. Ehlers, Ass't. Manager

INSTRUCTIONS

(1) Species: Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U. order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance. Groups: I. Water and Marsh Birds (Gaviiformes to Ciconiiformes and Gruiiformes)
II. Shorebirds, Gulls and Terns (Charadriiformes)
III. Doves and Pigeons (Columbiformes)
IV. Predaceous Birds (Falconiformes, Strigiformes and predaceous Passeriformes)

(2) First Seen: The first refuge record for the species for the season concerned.

(3) Peak Numbers: The greatest number of the species present in a limited interval of time.

(4) Last Seen: The last refuge record for the species during the season concerned.

(5) Production: Estimated number of young produced based on observations and actual counts.

(6) Total: Estimated total number of the species using the refuge during the period concerned.

INT.-DUP. SEC., WASH., D.C.

59317

3-1751
Form NR-1
(Nov. 194-,

MIGRATORY BIRDS
(other than waterfowl)

Refuge Neocedah Months of September 1 to December 31 1971

(1) Species	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Number
I. Water and Marsh Birds:										
Sandhill Crane	Summer resident		240	9/16	3	11/15				
Great Blue Heron	Summer resident		150	9/10	1	11/9				
Pied-billed Grebe	Summer resident		45	9/16	1	11/9				
Green Heron	Summer resident		Undetermined - Much more abundant than in previous years.							
American Bittern	Summer resident		Undetermined							
Sora Rail	Summer resident		"	"						
Virginia Rail	Summer resident		"	"						
American Egret	None noted									
Black-crowned Night Heron	None Noted									
II. Shorebirds, Gulls and Terns:										
Killdeer	Summer resident		Undetermined							
Greater Yellowlegs	"	"	"							
Lesser Yellowlegs	"	"	"							
Least Sandpiper	"	"	"							
Solitary Sandpiper	"	"	"							
Spotted Sandpiper	"	"	"							
Pectoral Sandpiper	"	"	"							
Common Tern	"	"	400	10/30	Undetermined					
Black Tern	"	"	Undetermined							
Herring Gull	None noted									
Ring-billed Gull	None noted									
Upland Plover	Summer resident		Undetermined							

(over)

(1)	(2)		(3)		(4)		(5)	(6)
III. Doves and Pigeons:								
Mourning dove White-winged dove	Summer resident		Undetermined		1	late Nov.		
IV. Predaceous Birds:								
Golden eagle Duck hawk	1	9/1	2	10/28	Winter in area			
Horned owl Magpie Raven	Year-round resident							
Crow	Year-round resident		300	October				
Bald Eagle	1	9/1	17	10/28	Winter in area			
Osprey	Summer resident		1	9/16	1	9/16		
Turkey Vulture	1	12/13	1	12/13	1	12/13		

Reported by Bradley D. Ehlers, Ass't. Ref. Mgr.

INSTRUCTIONS

(1) Species: Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U. order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance. Groups: I. Water and Marsh Birds (Gaviiformes to Ciconiiformes and Gruiiformes)
II. Shorebirds, Gulls and Terns (Charadriiformes)
III. Doves and Pigeons (Columbiformes)
IV. Predaceous Birds (Falconiformes, Strigiformes and predaceous Passeriformes)

(2) First Seen: The first refuge record for the species for the season concerned.

(3) Peak Numbers: The greatest number of the species present in a limited interval of time.

(4) Last Seen: The last refuge record for the species during the season concerned.

(5) Production: Estimated number of young produced based on observations and actual counts.

(6) Total: Estimated total number of the species using the refuge during the period concerned.

INT.-DUP. SEC., WASH., D.C.

59317

3-1750b
Form NR-1B
(Rev. Nov. 1957)

UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
BUREAU OF SPORT FISHERIES AND WILDLIFE

WATERFOWL UTILIZATION OF REFUGE HABITAT

Refuge Necedah For 12-month period ending August 31, 19 71

Reported by Bradley D. Ehlers Title Assistant Refuge Manager

(1) Area or Unit Designation	(2) Habitat Type	(2) Habitat Acreage		(3) Use-days	(4) Breeding Population	(5) Production
Unit I	Crops	130	Ducks	300,000	600	700
	Upland	8,805	Geese	100,500	15	20
	Marsh	1,500	Swans	620	0	0
	Water	1,000	Coots	100,000	0	0
	Total	11,435	Total	500,600	615	720
Unit II	Crops	292	Ducks	400,000	500	500
	Upland	7,488	Geese	200,000	10	10
	Marsh	1,000	Swans	3,000	0	0
	Water	700	Coots	11,720	0	0
	Total	9,480	Total	614,670	510	510
Unit III	Crops	0	Ducks	250,000	250	200
	Upland	4,540	Geese	200,000	15	20
	Marsh	2,000	Swans	90,000	0	0
	Water	3,000	Coots	97,000	0	0
	Total	9,540	Total	637,000	265	220
Unit IV	Crops	4	Ducks	148,692	135	70
	Upland	7,048	Geese	29,750	0	0
	Marsh	1,300	Swans	0	0	0
	Water	800	Coots	0	0	0
	Total	9,152	Total	175,937	135	70
TOTALS:	Crops	426	Ducks	1,098,692	1,485	1,470
	Upland	27,881	Geese	529,750	40	50
	Marsh	5,800	Swans	3,936	0	0
	Water	5,500	Coots	201,670	0	0
	Total	39,607	Total	1,834,048		
	Crops		Ducks			
	Upland		Geese			
	Marsh		Swans			
	Water		Coots			
	Total		Total			
	Crops		Ducks			
	Upland		Geese			
	Marsh		Swans			
	Water		Coots			
	Total		Total			

(over)

INSTRUCTIONS

All tabulated information should be based on the best available techniques for obtaining these data. Estimates having no foundation in fact must be omitted. Refuge grand totals for all categories should be provided in the spaces below the last unit tabulation. Additional forms should be used if the number of units reported upon exceeds the capacity of one page. This report embraces the preceding 12-month period, NOT the fiscal or calendar year, and is submitted annually with the May-August Narrative Report.

(1) Area or Unit: A geographical unit which, because of size, terrain characteristics, habitat type and current or anticipated management practices, may be considered an entity apart from other areas in the refuge census pattern. The combined estimated acreages of all units should be equal the total refuge area. A detailed map and accompanying verbal description of the habitat types of each unit should be forwarded with the initial report for each refuge, and thereafter need only be submitted to report changes in unit boundaries or their descriptions.

(2) Habitat: Crops include all cultivated croplands such as cereals and green forage, planted food patches and agricultural row crops; upland is all uncultivated terrain lying above the plant communities requiring seasonal submergence or a completely saturated soil condition a part of each year, and includes lands whose temporary flooding facilitates use of non-aquatic type foods; marsh extends from the upland community to, but not including, the water type and consists of the relatively stable marginal or shallow-growing emergent vegetation type, including wet meadow and deep marsh; and in the water category are all other water areas inundated most or all of the growing season and extending from the deeper edge of the marsh zone to strictly open-water, embracing such habitat as shallow playa lakes, deep lakes and reservoirs, true shrub and tree swamps, open flowing water and maritime bays, sounds and estuaries. Acreage estimates for all four types should be computed and kept as accurate as possible through reference to available maps supplemented by periodic field observations. The sum of these estimates should equal the area of the entire unit.

(3) Use-days: Use-days is computed by multiplying weekly waterfowl population figures by seven, and should agree with information reported on Form NR-1.

(4) Breeding Population: An estimate of the total breeding population of each category of birds for each area or unit.

(5) Production: Estimated total number of young raised to flight age.

Interior Duplicating Section, Washington, D. C. 27580

3-1752
Form NR-2
(April 1946)

UPLAND GAME BIRDS

Refuge Necedah Months of January 1 to April 30, 1971

(1) Species	(2) Density	(3) Young Produced			(4) Sex Ratio	(5) Removals			(6) Total	(7) Remarks
Common Name	Cover types, total acreage of habitat	Acres Per Bird	Number broods observed	Estimated Total	Percentage	Hunting	For Re-stocking	For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
Ruffed Grouse	23,000								1,000	Apparent good winter carry-over.
Sharp-tailed Grouse	10,000								1-3	One visual sighting on 4/17; decreasing.
Wild Turkey	35,000								30-40	Severe winter mortality; deep and fluffy snow.
Bobwhite Quail	5,000								5-15	Remnant population; decreasing.
Woodcock	12,000								Unknown	No basis for estimate
Wilson's Snipe	5,000								Unknown	No basis for estimate

INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS*

(1) SPECIES: Use correct common name.

(2) DENSITY: Applies particularly to those species considered in removal programs (public hunts,etc.). Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.

(3) YOUNG PRODUCED: Estimated number of young produced, based upon observations and actual counts in representative breeding habitat.

(4) SEX RATIO: This column applies primarily to wild turkey, pheasants, etc. Include data on other species if available.

(5) REMOVALS: Indicate total number in each category removed during the report period.

(6) TOTAL: Estimated total number using the refuge during the report period. This may include resident birds plus those migrating into the refuge during certain seasons.

(7) REMARKS: Indicate method used to determine population and area covered in survey. Also include other pertinent information not specifically requested.

*Only columns applicable to the period covered should be used.

3-1752
Form NR
(April 1946)

UPLAND GAME BIRDS

Refuge Necedah Months of May 1 to August 31, 19 71

(1) Species	(2) Density	(3) Young Produced			(4) Sex Ratio	(5) Removals			(6) Total	(7) Remarks
Common Name	Cover types, total acreage of habitat	Acres Per Bird	Number broods observed	Estimated Total	Percentage	Hunting	For Re-stocking	For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
Ruffed Grouse	23,000								3,000	Population up according to State census, production good from a few visual sightings.
Sharp-tailed Grouse	10,000								5 - 10	Three visual sightings.
Wild Turkey	30,000								100 - 200	Production fair from a few visual sightings, late hatch.
Woodcock	12,000								Unknown	
Snipe	5,000								Unknown	
Bobwhite Quail	5,000								Unknown	
Ring-necked Pheasant	5,000								5 - 10	

INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS*

(1) SPECIES: Use correct common name.

(2) DENSITY: Applies particularly to those species considered in removal programs (public hunts,etc.). Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.

(3) YOUNG PRODUCED: Estimated number of young produced, based upon observations and actual counts in representative breeding habitat.

(4) SEX RATIO: This column applies primarily to wild turkey, pheasants, etc. Include data on other species if available.

(5) REMOVALS: Indicate total number in each category removed during the report period.

(6) TOTAL: Estimated total number using the refuge during the report period. This may include resident birds plus those migrating into the refuge during certain seasons.

(7) REMARKS: Indicate method used to determine population and area covered in survey. Also include other pertinent information not specifically requested.

*Only columns applicable to the period covered should be used.

3-1752
Form NR
(April 1946)

UPLAND GAME BIRDS

Refuge **Necedah** Months of **September 1** to **December 31**, 19**71**

(1) Species	(2) Density	(3) Young Produced			(4) Sex Ratio	(5) Removals			(6) Total	(7) Remarks
Common Name	Cover types, total acreage of habitat	Acres Per Bird	Number broods observed	Estimated Total	Percentage	Hunting	For Re-stocking	For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
Ruffed Grouse	23,000								3,000	Birds common on roads in refuge throughout the period.
Sharp-tailed Grouse	10,000								5 or less	One sighted.
Wild Turkey	30,000								50 - 100	Numerous visual sightings in Sept., through mid-November. Small groups (3-6) in Dec.
Woodcock	12,000								Unknown	
Snipe	5,000								Unknown	
Bobwhite Quail	5,000								No sightings this period.	
Ring-necked Pheasant	5,000								No sightings this period. Heard one crow in October. Adult birds are released in the vicinity.	

INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS*

(1) SPECIES: Use correct common name.

(2) DENSITY: Applies particularly to those species considered in removal programs (public hunts,etc.). Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.

(3) YOUNG PRODUCED: Estimated number of young produced, based upon observations and actual counts in representative breeding habitat.

(4) SEX RATIO: This column applies primarily to wild turkey, pheasants, etc. Include data on other species if available.

(5) REMOVALS: Indicate total number in each category removed during the report period.

(6) TOTAL: Estimated total number using the refuge during the report period. This may include resident birds plus those migrating into the refuge during certain seasons.

(7) REMARKS: Indicate method used to determine population and area covered in survey. Also include other pertinent information not specifically requested.

*Only columns applicable to the period covered should be used.

Form NR

NR-3

BIG GAME

Refuge Necedah Year 194 71

(1) Species	(2) Density	(3) Young Produced	(4) Removals				(5) Losses			(6) Introductions		(7) Estimated Total Refuge Population as of Dec. 31	(8) Sex Ratio
Common Name	Cover types, total Acreage of Habitat	Number	Hunting	For Re-stocking	Sold	For Research	Predation	Disease	Winter Losses	Number	Source		Percentage
White-tailed Deer	35,000 acres of timber, brush and marsh	350	300									900	

1614

INSTRUCTIONS

Form NR-3 - BIG GAME

(1) SPECIES: Use correct common name; i.e., Mule deer, black-tailed deer, white-tailed deer. It is unnecessary to indicate sub-species such as northern or Louisiana white-tailed deer.

(2) DENSITY: Applies particularly to those species considered in removal programs (public hunts, etc.) exclusive of fenced herds. Detailed data may be omitted for species occuring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.

(3) YOUNG PRODUCED: Estimated total number of young produced on refuge.

(4) REMOVALS: Indicate total number in each category removed during the year.

(5) LOSSES: On the basis of known records or reliable estimates indicate total losses in each category during the year.

(6) INTRODUCTIONS: Indicate the number and refuge or agency from which stock was secured.

(7) TOTAL REFUGE POPULATION: Give the estimated population of <u>each species</u> on the refuge as of December 31.

(8) SEX RATION: Indicate the percentage of males and females of each species as determined from field observations or through removals.

3-1754
Form N. 4
(June 1945)

SMALL MAMMALS

Refuge Necedah Year ending April 30, 1971

(1) Species	(2) Density		(3) Removals					(4) Disposition of Furs						(5)
								Share Trapping						
Common Name	Cover Types & Total Acreage of Habitat	Acres Per Animal	Hunting	Fur Harvest	Predator Control *	For Re-stocking	For Re-search	Permit Number	Trappers Share	Refuge share	Total Refuge Furs Shipped	Furs Donated	Furs Destroyed	Total Population
Mink				2				T-71-2	1	1	1			50
Muskrat				118				T-71-1	1	1	1			600-800
								T-71-2	35	35	35			
								T-71-4	23	23	23			
Raccoon				5				T-71-2	4	0			35	500-600
								T-71-4	1	0				
Skunk				1				T-71-4	1	0				100
Fox				1				T-71-4	1	0				25
Beaver				33				T-71-1	3	0				150-200
								T-71-2	7	0				
								T-71-3	7	0				
								T-71-4	16	0				
Otter														50

* List removals by Predator Animal Hunter

REMARKS: Gov't. share of fur sold to Huber, Nekoosa, Wis.; 85¢ ea for rats; $1.50 for mink (no hair on tail)

Reported by Grady E. Hocutt, Ass't. Refuge Mgr.

INSTRUCTIONS

Form NR-4 - SMALL MAMMALS (Include data on all species of importance in the management program; i. e., muskrats, beaver, coon, mink, coyote. Data on small rodents may be omitted except for estimated total population of each species considered in control operations.)

(1) SPECIES: Use correct common name. Example: Striped skunk, spotted skunk, short-tailed weasel, gray squirrel, fox squirrel, white-tailed jackrabbit, etc. (Accepted common names in current use are found in the "Field Book of North American Mammals" by H. E. Anthony and the "Manual of the Vertebrate Animals of the Northeastern United States" by David Starr Jordan.)

(2) DENSITY: Applies particularly to those species considered in removal programs. Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottom land hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.

(3) REMOVALS: Indicate the total number under each category removed since April 30 of the previous year, including any taken on the refuge by Service Predatory Animal Hunter. Also show any removals not falling under headingslisted.

(4) DISPOSITION OF FUR: On share-trapped furs list the permit number, trapper's share, and refuge share. Indicate the number of pelts shipped to market, including furs taken by Service personnel. Total number of pelts of each species destroyed because of unprimeness or damaged condition, and furs donated to institutions or other agencies should be shown in the column provided.

(5) TOTAL POPULATION: Estimated total population of each species reported on as of April 30.

REMARKS: Indicate inventory method(s) used, size of sample area(s), introductions, and any other pertinent information not specifically requested.

32715

3-1755
Form R-5

DISEASE

Refuge Necedah Year 19 71

Botulism

Period of outbreak _____

Period of heaviest losses _____

Losses:

	Actual Count	Estimated
(a) Waterfowl		
(b) Shorebirds		
(c) Other		

Number Hospitalized	No. Recovered	% Recovered
(a) Waterfowl		
(b) Shorebirds		
(c) Other		

Areas affected (location and approximate acreage) _____

Water conditions (average depth of water in sickness areas, reflooding of exposed flats, etc.

Condition of vegetation and invertebrate life _____

Remarks _____

Lead Poisoning or other Disease

Kind of disease ~~Unknown (maybe not even disease)~~

Species affected ~~Great Blue Heron*~~
Bullheads and Northern Pike

Number Affected

Species	Actual Count	Estimated
~~Great Blue Heron~~	~~33~~	~~60~~
~~Bullheads~~	~~10~~	~~Unknown~~
~~Northern Pike~~	~~50~~	~~100+~~

Number Recovered ~~None in good enough condition for lab testing.~~

Number lost _____

Source of infection ~~Unknown~~

Water conditions ~~Not checked~~

* Nestlings died in the nest at Sprague Pool rookery. Died just before reaching flight stage. No dead adults found.

Food conditions _____

Remarks Die-off between June 15 - 25. Not discovered until June 30. Other die-offs of herons in nest have occurred but no explanation. Future monitoring is to be done by refuge staff. Fish found below Sprague Pool and in upper end of Rynearson No. 1 Pool. They ~~may have died from rapid water level changes.~~

See Blue Heron section of NR for details. Also memo in files with details.

INT.-DUP., D.C.- 53319-69

3-1757
Form NR-,
(Rev.June 1960)

(1)

NONAGRICULTURAL COLLECTIONS, RECEIPTS, AND PLANTINGS

Refuge Necedah Year 19 71

Species	Collections and Receipts (Seeds, rootstocks, trees, shrubs)						Plantings (Marsh - Aquatic - Upland)						
	Amount (Lbs., bus., etc.)	(2) C or R	Date	Method or Source	Cost	(3) Total Amount on Hand	Location of Area Planted	Rate of Seeding or Planting	Amount Planted (Acres or Yards of Shoreline)	Amount and Nature of Propagules	Date	Survival	Cause of Los
Nothing to report													

(1) Report agronomic farm crops on Form NR-8
(2) C = Collections and R = Receipts
(3) Use "S" to denote surplus

Total acreage planted:
Marsh and aquatic _____
Hedgerows, cover patches _____
Food strips, food patches _____
Forest plantings _____

Remarks: _____

3-1758
Form N[illegible] 8
(Rev. [illegible]n. 1956)

Fish and Wildlife Service Branch of Wildlife Refuges

CULTIVATED CROPS - HAYING - GRAZING

Refuge **Necedah** County **Juneau** State **Wisconsin**

Cultivated Crops Grown	Permittee's Share Harvested		Government's Share or Return Harvested		Government's Share or Return Unharvested		Total Acreage Planted	Green Manure, Cover and Water-fowl Browsing Crops Type and Kind	Total Acreage
	Acres	Bu./Tons	Acres	Bu./ Tons	Acres	Bu. ~~/Tons~~			
Field Corn					23	1,200	23	**Rye**	30
Buckwheat					48	600	48	**Alfalfa**	52
								Grass mixture, Bluegrass, Red-top, Timothy, legumes	120
								Millet	9
								Fallow Ag. Land.	0

No. of Permittees: Agricultural Operations **0** Haying Operations **0** Grazing Operations **0**

Hay - Improved (Specify Kind)	Tons Harvested	Acres	Cash Revenue	Grazing	Number Animals	AUM'S	Cash Revenue	ACREAGE
				1. Cattle				
				2. Other	**Apiary**	**40 hives**	**$4.00**	
				1. Total Refuge Acreage Under Cultivation				**282**
Hay - Wild				2. Acreage Cultivated as Service Operation				**282**

DIRECTIONS FOR PREPARING FORM NR--8'
CULTIVATED CROPS - HAYING - GRAZING

Report Form NR-8 should be prepared on a calendar-year basis for all crops which were planted during the calendar year and for haying and grazing operations carried on during the same period.

Separate reports shall be furnished for Refuge lands in each county when a refuge is located in more than one county or State.

Cultivated Crops Grown - List all crops planted, grown and harvested on the refuge during the reporting period regardless of purpose. Crops in kind which have been planted by more than one permittee or this Service shall be combined for reporting purposes.

Permittee's Share - Only thenumber of acres utilized by the permittee for his own benefit should be shown under the Acres column, and only the number of bushels of farm crops harvested by the permittee for himself should be shown under the Bushels Harvested column. Report all crops harvested in bushels or fractions thereof except such crops as silage, watermelons, cotton, tobacco, and hay, which should be reported in tons or fractions thereof.

Government's Share or Return - Harvested Show the acreage and number of bushels harvested for the Government of crops produced by permittees or refuge personnel. Unharvested Show the exact acreage and the estimated number of bushels of grain available for wildlife. If grazing is made available to waterfowl through the planting of grain, cover, green manure, grazing or hay crops, estimate the tonnage of green food produced or utilized and report under Bushels Unharvesed column.

Total Acreage Planted - Report all acreage planted, including crop failures.

Green Manure, Cover and Waterfowl Grazing Crops Specify the acreage kind and purpose of the crop. These crops and the acreage may be duplicated under cultivated crops if planted during the year, or a duplication may occur under hay if the crop results from a perennial planting.

Hay - Improved - List separately the kinds of improved hay grown. Annual plantings should also be reported under Cultivated Crops, and perennial hay should be listed in the same manner at time of planting

Total Refuge Acreage Under Cultivation Report total land area devoted to agricultural purposes during the year.

3-1570
NR-8a
(4/54)

REFUGE GRAIN REPORT

Refuge NECEDAH Months of January through December, 1971

(1) Variety*	(2) On Hand Beginning of Period	(3) Received During Period	(4) Total	(5) Grain Disposed of				(6) On Hand End of Period	(7) Proposed or Suitable Use*		
				Transferred	Seeded	Fed	Total		Seed	Feed	Surplus
Corn (shelled)	100		100			30	30	70		70	
Corn (seed)	0	5	5		5		5	0			
Wheat, spring	20		20			9	9	11		11	
Buckwheat	0	52	52		40		40	12	12		
Rye	55	0	55		44		44	11		11	
Millet, Red	13		13					13	13		
Sorghum	3		3					3		3	
Oats	10		10					10	10		
Alfalfa, Vernal	2		2		1		1	1	1		
Bluegrass	1		1		1		1	0			
Red Clover	3		3		2		2	1	1		
Timothy	3		3					3	3		
Smartweed	4		4					4	4		

(8) Indicate shipping or collection points New Lisbon, Wisconsin

(9) Grain is stored at refuge granaries

(10) Remarks

*See instructions on back.

REFUGE GRAIN REPORT

This report should cover all grain on hand, received, or disposed of, during the period covered by this narrative report.

Report all grain in bushels. For the purpose of this report the following approximate weights of grain shall be considered equivalent to a bushel: Corn (shelled)—55 lb., corn (ear)—70 lb., wheat—60 lb., barley—50 lb., rye—55 lb., oats—30 lb., soy beans—60 lb., millet—50 lb., cowpeas—60 lb., and mixed—50 lb. In computing volume of granaries, multiply the cubic contents (cu. ft.) by 0.8 bushels.

(1) List each type of grain separately and specifically, as flint corn, yellow dent corn, square deal hybrid corn, garnet wheat, red May wheat, durum wheat, spring wheat, proso millet, combine milo, new era cowpeas, mikado soy beans, etc. Mere listing as corn, wheat, and soybeans will not suffice, as specific details are necessary in considering transfer of seed supplies to other refuges. Include only domestic grains; aquatic and other seeds will be listed on NR–9.

(3) Report all grain received during period from all sources, such as transfer, share cropping, or harvest from food patches.

(4) A total of columns 2 and 3.

(6) Column 4 less column 5.

(7) This is a proposed break-down by varieties of grain listed in column 6. Indicate if grain is suitable for seeding new crops.

(8) Nearest railroad station for shipping and receiving.

(9) Where stored on refuge: "Headquarters granary," etc.

(10) Indicate here the source of grain shipped in, destination of grain transferred, data on condition of grain, unusual uses proposed.

INT.-DEP. SEC., WASH., D.C. 17065

3-1761
Form NR-
(2/46)

TIMBER REMOVAL

Refuge Necedah Year 1971

Permittee	Permit No.	Unit or Location	Acreage	No. of Units Expressed in B. F., ties, etc. CORDS	Rate of Charge	Total Income	Reservations and/or Diameter Limits	Species Cut
Becker Forest Prod.	68-10	S.25-20N2E	350	15.0 750.0 50.0	3.00 .50	Reported 1969 NR	Clear cut	Jack pine Oak Aspen
O. Baumgart	70-18	S.20-19N3E	23	228.07	6.30	1,436.84	Cut mature PJ	Jack pine
D. Ziebell	70-19	S.31-20N3E	150	220.0 210.0 30.0	5.60 .50 .50	Reported 1970 NR	Clear cut	Jack pine Oak Aspen
D. Ziebell	70-20	S.31-20N3E	130	60.0 500.0 85.0	7.00 .65 .50	Reported 1970 NR	Clear cut	Jack pine Oak Aspen
M. Bertotto	70-22	S.36-20N2E	175	400.0 310.0 410.0	7.28 2.78 2.05	Reported 1970 NR	Clear cut	Jack pine Oak
D. Nowicki	71-1	S.3-18N3E	183	1,616.0	9.75	15,756.00	Cut mature PJ	Jack pine
Becker Forest Prod.	71-5	S.30-19N3E	135	180.0	1.00	1970 NR	Clear cut	Oak
L. Bloczynski	71-6	S.1 -19N2E	128	375.0 38.0 56.0	9.27 N/C N/C	3,476.25	Clear cut	Jack pine Oak Aspen
M. Bertotto	71-7	S.21-19N3E	25	125.0	9.25	1,156.25	Cut mature PJ	Jack pine
P. Steen	71-8	S.4-18N3E	25	203.0 60.0	9.25 1.50	1,877.75 90.00	Clear cut Clear cut	Jack pine Oak
Becker Forest Prod.	71-9*	S.29-19N3E	48	432.0	10.00	4,320.00	Cut mature PJ	Jack pine
Becker Forest Prod.	71-10*	S.24-20N2E		90.0 1,050.0	10.00 1.00	**	Clear cut Clear cut	Jack pine Oak
P. Steen	71-11	S.28-20N3E	40	160.0	10.01	1,601.60	Cut mature PJ	Jack pine

(CONTINUED NEXT PAGE)

*Incomplete as of 1/1/72

** Not started as of 12/31/71

Total acreage cut over..... Total income.....

No. of units removed B. F..... Method of slash disposal.....

Cords.....

Ties.....

.....

INT.-DUP. SEC., WASH., D.C. 36103

3-1761
Form NR-
(2/46)

TIMBER REMOVAL

Refuge Necedah Year 1971

Permittee	Permit No.	Unit or Location	Acreage	No. of Units Expressed in B. F., ties, etc. CORDS	Rate of Charge	Total Income	Reservations and/or Diameter Limits	Species Cut
Becker Forest Prod.	71-13*	3.6-20N3E	107	295.0	1.00	295.00	Cut mature aspen	Aspen
Becker Forest Prod.	72-3	3.28-20N3E	38	230.0	9.57	2,201.10	Cut mature PJ	Jack pine
Becker Forest Prod.	72-4*	3.7-19N3E	40	96.11	3.00	288.33	Remove storm damaged trees	Red pine
Becker Forest Prod.	72-5*	3.10-18N3E	17	135.0	10.50	1,417.50	Cut mature PJ	Jack pine
Becker Forest Prod.	72-6*	3.5-20N3E	80	400.0	1.00	400.00	Cut mature Aspen	Aspen
P. Steen	72-7*	3.28-20N3E			8.92	**	Cut mature PJ	Jack pine

* Incomplete as of 1/1/72
** Not started as of 12/31/71

Total acreage cut over 754 Total income $4,316.63

No. of units removed B. F.
Cords 4,448.18
Ties

Method of slash disposal lopped 18" maximum height

INT.-DUP. SEC., WASH., D.C. 36103

3-1979 (NR-12)
(9/63)

Bureau of Sport Fisheries and Wildlife

ANNUAL REPORT OF PESTICIDE APPLICATION

Refuge: Necedah

Proposal Number: 71-1

Reporting Year: 1971

INSTRUCTIONS: Wildlife Refuges Manual, secs. 3252d, 3394b and 3395.

Date(s) of Application	List of Target Pest(s)	Location of Area Treated	Total Acres Treated	Chemical(s) Used	Total Amount of Chemical Applied	Application Rate	Carrier and Rate	Method of Application
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
6/24/71	Quackgrass	Canfield, Irontop, West Yellow agricultural fields.	23	Atrasine 80%	70 lbs	3 lb/acre	Water 32 gal/ acre	Boom Sprayer

10. Summary of results (continue on reverse side, if necessary)

Poor results but helped corn some. Sprayed to late in season, sprayer plugged up and had excess of other weeds (nut sedge and fall panicum). Program in 1972 will be to reduce sedge and panicum as well as quackgrass.

35500

3-1750
Form NP-1
(Rev. rch 1953)

WATERFOWL

REFUGE NECEDAH

MONTHS OF September TO December, 19 71

(1) Species / week ending	(2) Weeks of reporting period: 1 9/4	2 9/11	3 9/18	4 9/25	5 10/2	6 10/9	7 10/16	8 10/23	9 10/30	10 11/6
Swans:										
Whistling									6	3
Trumpeter										
Geese:										
Canada	100	340	500	1,580	12,000	11,000	10,000	18,000	14,300	9,100
Cackling										
Brant										
White-fronted										
Snow			3	5	10	10	70	240	640	300
Blue			20	25	40	40	310	960	2,900	1,450
Other										
Ducks:										
Mallard	2,800	1,040	1,160	1,010	1,260	3,000	6,000	8,000	15,000	10,000
Black	280	100	110	100	120	300	600	800	1,500	1,000
Gadwall						100	400	1,000	2,100	100
Baldpate	100	410	1,790	2,540	1,400	2,100	4,500	3,000	2,500	120
Pintail		10	10	50	50	100	450	700	1,100	50
Green-winged teal	300	350	450	100	40	300	150	500	1,100	50
Blue-winged teal	380	670	1,000	370	140	100	50	50	100	
Cinnamon teal										
Shoveler					10	15	20	20	10	
Wood	570	350	330	280	430	300	250	50	50	
Redhead										
Ring-necked	20	20	20	20	20	20	20	100	70	5
Canvasback								1	1	
Scaup					2	2				
Goldeneye										
Bufflehead										
Ruddy					8	8	8	5	2	
Other Hooded Merganser	90	90	90	90	90	50	50	10	10	
Coot:	5	200	240	2,400	5,530	5,000	5,000	7,000	9,000	500

Int. Dup. Sec., Wash., D.C. 37944

3-1750a
Cont. NR-1
(Rev March 1953)

WATERFOWL
(Continuation Sheet)

REFUGE NECEDAH MONTHS OF September TO December, 19 71

(1) Species / week ending	(2) Weeks of reporting period 11/13 (11)	11/20 (12)	11/27 (13)	12/4 (14)	12/11 (15)	12/19 (16)	12/26 (17)	12/31 (18)	(3) Estimated waterfowl days use	(4) Production Broods: seen	Broods: Estimated total
Swans:											
Whistling			1						70		
Trumpeter											
Geese:											
Canada	4,300	3,460	3,100	450	450	300			622,560		
Cackling											
Brant											
White-fronted											
Snow									8,946		
Blue									40,215		
Other											
Ducks:											
Mallard	400	200	150	120	5	5			342,650		
Black	40	10	5	5	1	1			33,964		
Gadwall									25,900		
Baldpate									128,920		
Pintail									17,640		
Green-winged teal									22,480		
Blue-winged teal									18,880		
Cinnamon teal											
Shoveler									525		
Wood									16,560		
Redhead											
Ring-necked	5	5	5	5	1	1			2,299		
Canvasback	15								119		
Scaup									28		
Goldeneye											
Bufflehead											
Ruddy									217		
Other Hooded Merganser	10	30							4,000		
Coots: Common Merganser		10							70		
COOTS	2	1							244,131		

(over)

	(5) Total Days Use	(6) Peak Number	(7) Total Production
Swans	70	6	
Geese	671,721	19,200	
Ducks	614,252	23,543	
Coots	244,131	9,000	

SUMMARY

Principal feeding areas Flooded corn and buckwheat in Canfield Units, Goose Pool and Pool No. 1

Principal nesting areas

Reported by Bradley D. Ehlers

Bradley D. Ehlers, Ass't. Refuge Manager

INSTRUCTIONS (See Secs. 7531 through 7534, Wildlife Refuges Field Manual)

(1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and national significance.

(2) Weeks of Reporting Period: Estimated average refuge populations.

(3) Estimated Waterfowl Days Use: Average weekly populations x number of days present for each species.

(4) Production: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.

(5) Total Days Use: A summary of data recorded under (3).

(6) Peak Number: Maximum number of waterfowl present on refuge during any census of reporting period.

(7) Total Production: A summary of data recorded under (4).

Interior Duplicating Section, Washington, D. C.
1953

3-1751
Form NR-1
(Nov. 1945)

MIGRATORY BIRDS
(other than waterfowl)

Refuge Necedah Months of September 1 to December 31 1971

(1) Species	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Number
I. Water and Marsh Birds:										
Sandhill Crane	Summer resident		240	9/16	3	11/15				
Great Blue Heron	Summer resident		150	9/10	1	11/9				
Pied-billed Grebe	Summer resident		45	9/16	1	11/9				
Green Heron	Summer resident		Undetermined - Much more abundant than in previous years.							
American Bittern	Summer resident		Undetermined							
Sora Rail	Summer resident		"	"						
Virginia Rail	Summer resident		"	"						
American Egret	None noted									
Black-crowned Night Heron	None Noted									
II. Shorebirds, Gulls and Terns:										
Killdeer	Summer resident		Undetermined							
Greater Yellowlegs	"	"	"							
Lesser Yellowlegs	"	"	"							
Least Sandpiper	"	"	"							
Solitary Sandpiper	"	"	"							
Spotted Sandpiper	"	"	"							
Pectoral Sandpiper	"	"	"							
Common Tern	"	"	400	10/30	Undetermined					
Black Tern	"	"	Undetermined							
Herring Gull	None noted									
Ring-billed Gull	None noted									
Upland Plover	Summer resident		Undetermined							

(over)

(1)	(2)		(3)		(4)		(5)	(6)
III. Doves and Pigeons:								
Mourning dove	Summer resident		Undetermined		1	late Nov.		
White-winged dove								
IV. Predaceous Birds:								
Golden eagle	1	9/1	2	10/28	Winter	in area		
Duck hawk								
Horned owl	Year-round resident							
Magpie								
Raven								
Crow	Year-round resident		300	October				
Bald Eagle	1	9/1	17	10/28	Winter	in area		
Osprey	Summer resident		1	9/16	1	9/16		
Turkey Vulture	1	12/13	1	12/13	1	12/13		

Reported by Bradley D. Ehlers

Bradley D. Ehlers, Ass't. Ref. Mgr.

INSTRUCTIONS

(1) Species: Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U. order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance. Groups: I. Water and Marsh Birds (Gaviiformes to Ciconiiformes and Gruiiformes)
II. Shorebirds, Gulls and Terns (Charadriiformes)
III. Doves and Pigeons (Columbiformes)
IV. Predaceous Birds (Falconiformes, Strigiformes and predaceous Passeriformes)

(2) First Seen: The first refuge record for the species for the season concerned.

(3) Peak Numbers: The greatest number of the species present in a limited interval of time.

(4) Last Seen: The last refuge record for the species during the season concerned.

(5) Production: Estimated number of young produced based on observations and actual counts.

(6) Total: Estimated total number of the species using the refuge during the period concerned.

INT.-DUP. SEC., WASH., D.C.

59317

3-1752
Form NR
(April 1946)

UPLAND GAME BIRDS

Refuge Necedah Months of September 1 to December 31, 19 71

(1) Species	(2) Density	(3) Young Produced			(4) Sex Ratio	(5) Removals			(6) Total	(7) Remarks
Common Name	Cover types, total acreage of habitat	Acres Per Bird	Number broods observed	Estimated Total	Percentage	Hunting	For Re-stocking	For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
Ruffed Grouse	23,000								3,000	Birds common on roads in refuge throughout the period.
Sharp-tailed Grouse	10,000								5 or less	One sighted.
Wild Turkey	30,000								50 - 100	Numerous visual sightings in Sept., through mid-November. Small groups (3-6) in Dec.
Woodcock	12,000								Unknown	
Snipe	5,000								Unknown	
Bobwhite Quail	5,000								No sightings this period.	
Ring-necked Pheasant	5,000								No sightings this period. Heard one crow in October. Adult birds are released in the vicinity.	

INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS*

(1) SPECIES: Use correct common name.

(2) DENSITY: Applies particularly to those species considered in removal programs (public hunts,etc.). Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.

(3) YOUNG PRODUCED: Estimated number of young produced, based upon observations and actual counts in representative breeding habitat.

(4) SEX RATIO: This column applies primarily to wild turkey, pheasants, etc. Include data on other species if available.

(5) REMOVALS: Indicate total number in each category removed during the report period.

(6) TOTAL: Estimated total number using the refuge during the report period. This may include resident birds plus those migrating into the refuge during certain seasons.

(7) REMARKS: Indicate method used to determine population and area covered in survey. Also include other pertinent information not specifically requested.

*Only columns applicable to the period covered should be used.

Form NF

NR-3

BIG GAME

Refuge Necedah Year 19⅓ 71

(1) Species	(2) Density	(3) Young Produced	(4) Removals				(5) Losses			(6) Introductions		(7) Estimated Total Refuge Population as of Dec. 31	(8) Sex Ratio
Common Name	Cover types, total Acreage of Habitat	Number	Hunting	For Re-stocking	Sold	For Research	Predation	Disease	Winter Losses	Number	Source		Percentage
White-tailed Deer	35,000 acres of timber, brush and marsh	350	300									900	

1614

INSTRUCTIONS

Form NR-3 - BIG GAME

(1) SPECIES: Use correct common name; i.e., Mule deer, black-tailed deer, white-tailed deer. It is unnecessary to indicate sub-species such as northern or Louisiana white-tailed deer.

(2) DENSITY: Applies particularly to those species considered in removal programs (public hunts, etc.) exclusive of fenced herds. Detailed data may be omitted for species occuring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.

(3) YOUNG PRODUCED: Estimated total number of young produced on refuge.

(4) REMOVALS: Indicate total number in each category removed during the year.

(5) LOSSES: On the basis of known records or reliable estimates indicate total losses in each category during the year.

(6) INTRODUCTIONS: Indicate the number and refuge or agency from which stock was secured.

(7) TOTAL REFUGE POPULATION: Give the estimated population of <u>each species</u> on the refuge as of December 31.

(8) SEX RATION: Indicate the percentage of males and females of each species as determined from field observations or through removals.

3-1755
Form 3-5

DISEASE

Refuge Necedah Year 19 71

Botulism

Period of outbreak _____

Period of heaviest losses _____

Losses:

	Actual Count	Estimated
(a) Waterfowl		
(b) Shorebirds		
(c) Other		

Number Hospitalized	No. Recovered	% Recovered
(a) Waterfowl		
(b) Shorebirds		
(c) Other		

Areas affected (location and approximate acreage) _____

Water conditions (average depth of water in sickness areas, reflooding of exposed flats, etc.

Condition of vegetation and invertebrate life _____

Remarks _____

~~Lead Poisoning~~ or other Disease

Kind of disease Unknown (maybe not even disease)

Species affected Great Blue Heron*
Bullheads and Northern Pike

Number Affected

Species	Actual Count	Estimated
Great Blue Heron	33	60
Bullheads	10	Unknown
Northern Pike	50	100+

Number Recovered None in good enough condition for lab testing.

Number lost _____

Source of infection Unknown

Water conditions Not checked

* Nestlings died in the nest at Sprague Pool rookery. Died just before reaching flight stage. No dead adults found.

Food conditions _____

Remarks Die-off between June 15 - 25. Not discovered until June 30. Other die-offs of herons in nest have occurred but no explanation. Future monitoring is to be done by refuge staff. Fish found below Sprague Pool and in upper end of Rynearson No. 1 Pool. They may have died from rapid water level changes.

See Blue Heron section of NR for details. Also memo in files with details.

INT.-DUP., D.C.- 53319-59

3-1757
Form NR-,
(Rev. June 1960)

(1)

NONAGRICULTURAL COLLECTIONS, RECEIPTS, AND PLANTINGS

Refuge Necedah Year 19 71

Species	Collections and Receipts (Seeds, rootstocks, trees, shrubs)						Plantings (Marsh - Aquatic - Upland)						
	Amount (Lbs., bus., etc.)	(2) C or R	Date	Method or Source	Cost	(3) Total Amount on Hand	Location of Area Planted	Rate of Seeding or Planting	Amount Planted (Acres or Yards of Shoreline)	Amount and Nature of Propagules	Date	Survival	Cause of Los
Nothing to report													

(1) Report agronomic farm crops on Form NR-8
(2) C = Collections and R = Receipts
(3) Use "S" to denote surplus

Total acreage planted:
Marsh and aquatic _____
Hedgerows, cover patches _____
Food strips, food patches _____
Forest plantings _____

Remarks: _____

3-1758
Form N[illegible] 8
(Rev. [illegible]n. 1956)

Fish and Wildlife Service Branch of Wildlife Refuges

CULTIVATED CROPS - HAYING - GRAZING

Refuge Necedah County Juneau State Wisconsin

Cultivated Crops Grown	Permittee's Share Harvested		Government's Share or Return				Total Acreage Planted	Green Manure, Cover and Water-fowl Browsing Crops Type and Kind	Total Acreage
			Harvested		Unharvested				
	Acres	Bu./Tons	Acres	Bu./ Tons	Acres	Bu. ~~Tons~~			
Field Corn					23	1,200	23	Rye	30
Buckwheat					48	600	48	Alfalfa	52
								Grass mixture, Bluegrass, Red-top, Timothy, legumes	120
								Millet	9
								Fallow Ag. Land.	0

No. of Permittees: Agricultural Operations 0 Haying Operations 0 Grazing Operations 0

Hay - Improved (Specify Kind)	Tons Harvested	Acres	Cash Revenue	Grazing	Number Animals	AUM'S	Cash Revenue	ACREAGE
				1. Cattle				
				2. Other	Apiary	40 hives	$4.00	
				1. Total Refuge Acreage Under Cultivation				282
Hay - Wild				2. Acreage Cultivated as Service Operation				282

DIRECTIONS FOR PREPARING FORM NR--8'
CULTIVATED CROPS - HAYING - GRAZING

Report Form NR-8 should be prepared on a calendar-year basis for all crops which were planted during the calendar year and for haying and grazing operations carried on during the same period.

Separate reports shall be furnished for Refuge lands in each county when a refuge is located in more than one county or State.

Cultivated Crops Grown - List all crops planted, grown and harvested on the refuge during the reporting period regardless of purpose. Crops in kind which have been planted by more than one permittee or this Service shall be combined for reporting purposes.

Permittee's Share - Only thenumber of acres utilized by the permittee for his own benefit should be shown under the Acres column, and only the number of bushels of farm crops harvested by the permittee for himself should be shown under the Bushels Harvested column. Report all crops harvested in bushels or fractions thereof except such crops as silage, watermelons, cotton, tobacco, and hay, which should be reported in tons or fractions thereof.

Government's Share or Return - Harvested Show the acreage and number of bushels harvested for the Government of crops produced by permittees or refuge personnel. Unharvested Show the exact acreage and the estimated number of bushels of grain available for wildlife. If grazing is made available to waterfowl through the planting of grain, cover, green manure, grazing or hay crops, estimate the tonnage of green food produced or utilized and report under Bushels Unharvesed column.

Total Acreage Planted - Report all acreage planted, including crop failures.

Green Manure, Cover and Waterfowl Grazing Crops Specify the acreage kind and purpose of the crop. These crops and the acreage may be duplicated under cultivated crops if planted during the year, or a duplication may occur under hay if the crop results from a perennial planting.

Hay - Improved - List separately the kinds of improved hay grown. Annual plantings should also be reported under Cultivated Crops, and perennial hay should be listed in the same manner at time of planting

Total Refuge Acreage Under Cultivation Report total land area devoted to agricultural purposes during the year.

3-1570
NR-8a
(4/54)

REFUGE GRAIN REPORT

Refuge NECEDAH Months of January through December, 1971

(1) Variety*	(2) On Hand Beginning of Period	(3) Received During Period	(4) Total	(5) Grain Disposed of				(6) On Hand End of Period	(7) Proposed or Suitable Use*		
				Transferred	Seeded	Fed	Total		Seed	Feed	Surplus
Corn (shelled)	100		100			30	30	70		70	
Corn (seed)	0	5	5		5		5	0			
Wheat, spring	20		20			9	9	11		11	
Buckwheat	0	52	52		40		40	12	12		
Rye	55	0	55		44		44	11		11	
Millet, Red	13		13					13	13		
Sorghum	3		3					3		3	
Oats	10		10					10	10		
Alfalfa, Vernal	2		2		1		1	1	1		
Bluegrass	1		1		1		1	0			
Red Clover	3		3		2		2	1	1		
Timothy	3		3					3	3		
Smartweed	4		4					4	4		

(8) Indicate shipping or collection points New Lisbon, Wisconsin

(9) Grain is stored at refuge granaries

(10) Remarks

*See instructions on back.

NR-8a

REFUGE GRAIN REPORT

This report should cover all grain on hand, received, or disposed of, during the period covered by this narrative report.

Report all grain in bushels. For the purpose of this report the following approximate weights of grain shall be considered equivalent to a bushel: Corn (shelled)—55 lb., corn (ear)—70 lb., wheat—60 lb., barley—50 lb., rye—55 lb., oats—30 lb., soy beans—60 lb., millet—50 lb., cowpeas—60 lb., and mixed—50 lb. In computing volume of granaries, multiply the cubic contents (cu. ft.) by 0.8 bushels.

(1) List each type of grain separately and specifically, as flint corn, yellow dent corn, square deal hybrid corn, garnet wheat, red May wheat, durum wheat, spring wheat, proso millet, combine milo, new era cowpeas, mikado soy beans, etc. Mere listing as corn, wheat, and soybeans will not suffice, as specific details are necessary in considering transfer of seed supplies to other refuges. Include only domestic grains; aquatic and other seeds will be listed on NR–9.

(3) Report all grain received during period from all sources, such as transfer, share cropping, or harvest from food patches.

(4) A total of columns 2 and 3.

(6) Column 4 less column 5.

(7) This is a proposed break-down by varieties of grain listed in column 6. Indicate if grain is suitable for seeding new crops.

(8) Nearest railroad station for shipping and receiving.

(9) Where stored on refuge: "Headquarters granary," etc.

(10) Indicate here the source of grain shipped in, destination of grain transferred, data on condition of grain, unusual uses proposed.

INT.-DEP. SEC., WASH., D.C. 17065

3-1761
Form NR-
(2/46)

TIMBER REMOVAL

Refuge Necedah Year 19~~6~~71

Permittee	Permit No.	Unit or Location	Acreage	No. of Units Expressed in B. F., ties, etc. CORDS	Rate of Charge	Total Income	Reservations and/or Diameter Limits	Species Cut
Becker Forest Prod.	68-10	S.25-20N2E	350	15.0 750.0 50.0	3.00 .50	Reported 1969 NR	Clear cut	Jack pine Oak Aspen
O. Baumgart	70-18	S.20-19N3E	23	228.07	6.30	1,436.84	Cut mature PJ	Jack pine
D. Ziebell	70-19	S.31-20N3E	150	220.0 210.0 30.0	5.60 .50 .50	Reported 1970 NR	Clear cut	Jack pine Oak Aspen
D. Ziebell	70-20	S.31-20N3E	130	60.0 500.0 85.0	7.00 .65 .50	Reported 1970 NR	Clear cut	Jack pine Oak Aspen
M. Bertotto	70-22	S.36-20N2E	175	400.0 310.0 410.0	7.28 2.78 2.05	Reported 1970 NR	Clear cut	Jack pine Oak
D. Nowicki	71-1	S.3-18N3E	183	1,616.0	9.75	15,756.00	Cut mature PJ	Jack pine
Becker Forest Prod.	71-5	S.30-19N3E	135	180.0	1.00	1970 NR	Clear cut	Oak
L. Bloczynski	71-6	S.1 -19N2E	128	375.0 38.0 56.0	9.27 N/C N/C	3,476.25	Clear cut	Jack pine Oak Aspen
M. Bertotto	71-7	S.21-19N3E	25	125.0	9.25	1,156.25	Cut mature PJ	Jack pine
P. Steen	71-8	S.4-18N3E	25	203.0 60.0	9.25 1.50	1,877.75 90.00	Clear cut Clear cut	Jack pine Oak
Becker Forest Prod.	71-9*	S.29-19N3E	48	432.0	10.00	4,320.00	Cut mature PJ	Jack pine
Becker Forest Prod.	71-10*	S.24-20N2E		90.0 1,050.0	10.00 1.00	**	Clear cut Clear cut	Jack pine Oak
P. Steen	71-11	S.28-20N3E	40	160.0	10.01	1,601.60	Cut mature PJ	Jack pine

(CONTINUED NEXT PAGE)

*Incomplete as of 1/1/72 ** Not started as of 12/31/71

Total acreage cut over..... Total income.....

No. of units removed B. F..... Method of slash disposal.....

Cords.....

Ties.....

.....

INT.-DUP. SEC., WASH., D.C. 36103

3-1761
Form NR-
(2/46)

TIMBER REMOVAL

Refuge Necedah Year 19[illegible] 71

Permittee	Permit No.	Unit or Location	Acreage	No. of Units Expressed in B. F., ties, etc. CORDS	Rate of Charge	Total Income	Reservations and/or Diameter Limits	Species Cut
Becker Forest Prod.	71-13*	S.6-20N3E	107	295.0	1.00	295.00	Cut mature aspen	Aspen
Becker Forest Prod.	72-3	S.28-20N3E	38	230.0	9.57	2,201.10	Cut mature PJ	Jack pine
Becker Forest Prod.	72-4*	S.7-19N3E	40	96.11	3.00	288.33	Remove storm damaged trees	Red pine
Becker Forest Prod.	72-5*	S.10-18N3E	17	135.0	10.50	1,417.50	Cut mature PJ	Jack pine
Becker Forest Prod.	72-6*	S.5-20N3E	80	400.0	1.00	400.00	Cut mature Aspen	Aspen
P. Steen	72-7*	S.28-20N3E			8.92	**	Cut mature PJ	Jack pine

* Incomplete as of 1/1/72
** Not started as of 12/31/71

Total acreage cut over 754 Total income $34,316.63

No. of units removed B. F.
Cords 4,448.18
Ties

Method of slash disposal lopped 18" maximum height

INT.-DUP. SEC., WASH., D.C. 36103